
Office of Utilities Regulation

**Quality of Service Standards and
Guidelines for the
Telecommunications Sector**

A Consultative Document



OFFICE OF UTILITIES REGULATION

October 25, 2010

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Abstract

Under the Telecommunications Act 2000 and the Office of Utilities Regulation Act 1995 as amended, the Office of Utilities Regulation (OUR) has objectives of encouraging competition and protecting the interests of consumers. It intends to work towards these objectives by exercising its powers to require information from service providers, prescribe quality of service standards and introduce guidelines for consumer protection.

When consumers have enough information about service offerings, they can choose those that best meet their requirements for prices, quality and so on. By doing so they can benefit both directly, from better choices, and indirectly, from greater competition.

However, information is not always widely known. When service providers ensure that quality always reaches acceptable standards, consumers are protected better against poor choices.

Recent investigations by the OUR have established that sometimes one service offering has higher prices and lower quality than another. Making information available about achieved and acceptable quality levels should therefore benefit consumers. This document proposes ways of doing this without imposing significant burdens on service providers.

Related investigations have shown that the contract terms and other information provided to consumers in telecommunications are not uniformly fair and clear. Consumers are unable to rely on a shared basis for their rights. This document proposes a basis on which all service providers can build.

The proposals cover fixed telephony, mobile telephony and internet access. The OUR invites responses to them, and to the other contents of this document, from all stakeholders, including consumers, service providers and policy makers.

Comments from interested parties

Responses to this document

Persons who wish to express opinions on this document are invited to respond in writing to the OUR. The responses may cover any relevant matters.

The responses should be sent by post, fax or email to:

Marsha Minott

P.O Box 593, 36 Trafalgar Road, Kingston 10

Fax: (876) 929 3635

Email: mminott@our.org.jm

The responses are requested by November 12, 2010.

Respondents are requested to limit their use of confidentiality markings as far as possible and are encouraged to supply responses in electronic form for placing on the OUR website.

Comments on responses

There will be a specific period for respondents to view and make comments on non-confidential parts of other responses. The comments may correct factual errors or put forward counter-arguments.

The comments on responses are requested by November 26, 2010.

Arrangements for viewing responses

The non-confidential parts of responses will also be made available to the public through the OUR Information Centre (OURIC). Persons who wish to view the responses should make an appointment with:

Kishana Munroe, Public Affairs Officer

Telephone: (876) 968 6053 or 6057

Fax: (876) 929 3635

Email: kmunroe@our.org.jm

Individuals with appointments should visit the OUR offices at:

3rd Floor, Petroleum Corporation of Jamaica (PCJ) Resource Centre, 36 Trafalgar Road, Kingston 10.

Photocopies of selected responses may be requested at a price which reflects just the cost to the OUR.

Consultation timetable

The timetable for this consultation is summarized below.

Event	Date
Responses to this document	November 12, 2010
Comments on responses	November 26, 2010
Determination	January 28, 2011

1 Background

1.1 Intentions

The OUR is legally required to take the measures that it considers necessary or desirable to encourage competition and protect the interests of consumers. Accordingly it has been investigating the quality measurements and quality levels of the telecommunications service providers, and apparent needs for extra consumer protection, with the intention of proposing relevant measures. This document summarizes the investigations and develops the proposals for consultation. Some of the proposals mainly protect consumers, while others (such as publication of price comparisons) also encourage competition.

In general the document builds on the capabilities of the OUR to:

- Require adherence to standards by service providers.
- Obtain information from service providers by formal information requests.
- Examine documents and perform experiments to check quality.
- Spread information through publication, publicity and teaching materials.

In particular the document proposes for consultation:

- Quality of service standards that place requirements on, and make recommendations for, large telecommunications service providers (in Annex A).
- Level of service guidelines that place requirements on, and make recommendations for, all telecommunications service providers (in Annex B).

The OUR envisages that, after being revised to take account of the consultation, the “requirements” will be issued as legally binding regulations under the *Telecommunications Act, 2000* (subject to affirmative resolution), and the “recommendations” will be considered as examples of good practice in any sector-specific interpretation of general legislation on consumer protection.

1.2 Motivations

The OUR intends quality of service monitoring to be appropriate to its users and consistent with the level of competition. In more detail, it has the following main objectives for the quality of service proposals:

- **Helping customers to make informed choices.** Consumers benefit from the publication of information about the quality levels reached by service providers. They become more able to make informed choices, which in turn increase competition and potentially diversity of services.
- **Maintaining or improving quality in the absence of competition.** If competition is weak a service provider might need regulatory incentives to maintain quality. The service provider might otherwise achieve its desired profitability by cutting costs without much consideration for quality, especially when there are price caps.
- **Maintaining or improving quality in the presence of competition.** If competition is strong a service provider might need regulatory incentives to maintain quality. The service provider might otherwise neglect quality in the pursuit of market share, network coverage or brand image; to retain subscribers that chose it when its quality levels were higher it might rely on marketing tactics or the inconvenience and cost of switching services.

In Jamaica, fixed telephony has one major service provider (which nearly has a monopoly) and mobile telephony has few major service providers (which together form an oligopoly)¹. In both cases market concentration is high. Market development and consumer protection can be assisted by telling consumers how different service offerings compare with each other and against standards. This is recognised in the legal provisions governing the OUR, the earlier consultations carried out by the OUR and the internationally accepted consumer rights that are mentioned in the rest of this section.

1.3 Legal provisions

In Annex E there are excerpts from the legal framework for telecommunications. The following parts relate most directly to these proposals:

- Section 4(2) of the *Office of Utilities Regulation Act, 1995, as amended*. This allows the OUR to give directions to service providers with a view to ensuring that the needs of consumers are met.
- Section 4(3) of the *Office of Utilities Regulation Act, 1995, as amended*. This requires the OUR to take the measures that it considers necessary or desirable to encourage competition and protect the interests of consumers.
- Section 16(1) of the *Office of Utilities Regulation Act, 1995, as amended*. This allows the OUR, with the approval of the minister, to impose on service providers obligations about informing consumers about prices.
- Section 4(4) of the *Telecommunications Act, 2000*. This allows the OUR to require a service provider to supply specified information or documents in a reasonable time. Section 10(1) of the *Office of Utilities Regulation Act, 1995, as amended* reiterates this provision.
- Section 44(3) of the *Telecommunications Act, 2000*. This allows the OUR to make rules subject to affirmative resolution prescribing quality standards for all service providers or for dominant service providers. Section 4(5) of the *Office of Utilities Regulation Act, 1995, as amended* has more specific provisions that allow the OUR, by order published in the *Gazette*, to prescribe quality measurement standards, to provide for inspection and testing and to prescribe minimum quality standards.
- Section 44(4) of the *Telecommunications Act, 2000*. This allows the OUR to make rules about the administration and resolution of customer complaints by service providers and the OUR.

In Annex E there are also excerpts from laws related to consumer protection. Though these are not specific to telecommunications, they have implications for telecommunications service providers. Much of this document is concerned with those implications.

1.4 Earlier consultations

The OUR has issued the following documents related to quality of service for telecommunications:

- *Quality of Service Standards for Cable & Wireless Jamaica*, June 2001. This proposed minimum standards for Cable & Wireless Jamaica (CWJ) fixed and mobile telephony.

¹ The term 'telephony' is to be interpreted broadly. In Jamaica mobile telephony provides text messages as well as voice calls and fixed telephony could in principle provide text messages and "clear channel" ISDN.

CWJ had effectively a monopoly at that time, so the document was specific to it but noted that the proposals would become applicable to new service providers.

- *Telecommunications Markets Information Requirements*, April 2004. This required measurements relating to CWJ fault repair times in quarterly information reports to OUR.
- *Quality of Service Standards for the Telecommunications Sector* ('the 2007 consultation'), October 2007. This took account of the entry of new service providers (both fixed and mobile) and the introduction of broadband internet access. Though it was mainly about quality of service, it included proposals for the information to be provided to consumers by Internet Service Providers (ISPs) and on prepaid calling cards. The proposals in the document were put on one side subsequently until further resources became available.
- *Price Cap Plan for Cable and Wireless Jamaica* ('the 2008 consultation'), August 2008. This proposed minimum standards relating to CWJ installation and fault repair times, such that failures to meet the minimum standards would affect the price cap.
- *Invitation for Comments on Draft RIO 6*, June 2009. This concerned the Reference Interconnect Offer (RIO) proposed by CWJ. It did not change significantly the Joint Working Manual and the Parameter Schedule, which lay down the quality of service standards.

The service providers were not very enthusiastic about some of the quality of service proposals in these documents. For instance:

- In its response to the 2007 consultation, CWJ (LIME) favoured voluntary reporting whereby service providers would establish quality of service standards, under the guidance of the OUR, that they would meet. It also suggested that the quality of service proposals in the 2008 consultation were discriminatory as they applied only to its fixed telephony services although (in its opinion) fixed and mobile telephony were substitutes for each other.
- In its response to the 2007 consultation, Digicel questioned the need for quality of service regulation for mobile telephony and internet access and, more generally, for services that are likely to become competitive; it commented on the difficulties in applying minimum standards from other countries, in quantifying switching costs, in demonstrating inadequacies in quality of service, and in administering compensation schemes. However, it agreed on the need to provide clear and accurate information so that consumers could choose services according to their prices and quality.
- In its response to the 2007 consultation, Flow objected to quality of service regulation except when it applies to the wholesale services offered by dominant service providers to other service providers. However, it agreed with the quality of service proposals in the 2008 consultation, which related to retail services.

In brief, among the service providers there was an acceptance of the benefits offered by information about quality of service, a preference for quality of service levels emerging from competition, and a reluctance to have quality of service standards imposed by regulation.

The OUR has received no comments from service providers on those earlier proposals in relation to the consumer experience other than quality of service.

1.5 Competition and consumer policies

The success of any market economy rests on mutually beneficial transactions between providers of goods and services, and consumers that want goods and services. Such transactions normally occur in a framework of **contract law** (which is based on custom if it is not formalised). This says that a transaction involves agreement on promises from both

buyer and seller: the seller promises to provide goods or services that the buyer promises to pay for. Both parties must keep their promises or be subject to legal remedies. There is a presumption that both parties make free choices and informed decisions to enter into the agreement.

As markets develop, sellers acquire different sizes and strengths, and issues of fair competition arise. These are normally handled in a framework of **competition law** which regulates how producers behave towards each other (by not making misleading claims, for example) and towards buyers (by not abusing market dominance, for example). Consumer policy is closely linked with competition policy: competitive markets provide major consumer benefits, while the buying decisions of consumers are important in making markets competitive. Active consumer participation is good for the whole market as well as for the individual concerned. Participation can be encouraged, for example by educational campaigns, but obviously remains a personal choice.

Even small sellers often have more money, influence or power than individual consumers. This leads to an imbalance in bargaining power between buyers and sellers. **Consumer protection law** commonly aims to redress this imbalance (by prohibiting contract terms that unduly favour the seller at the expense of the buyer, for example).

On top of the legal rights which consumers have through these three sorts of law, there are many widely accepted good practices. The aims of these good practices include:

- Avoiding unwarranted discrimination against some consumers, while providing extra support for vulnerable consumers.
- Educating consumers in comparison shopping and knowing their rights.

1.6 Internationally accepted consumer rights

The international federation of consumer organisations, Consumers International, works from eight basic consumer rights (which build on the notion of a fair contract between seller and buyer)². Figure 1 lists them and relates them to acts currently in force, to the quality of service standards and level of service guidelines proposed in Annexes A and B of this document, and to some topics outside the scope of this document. It provides an overview of some ways in which these provisions fit together, not a comprehensive picture: several of the provisions are actually related to more than one right, and some rights relate also to policies outside the scope of these provisions.

Right	Acts	Quality of service standards and level of service guidelines	Telecommunications topics outside the scope of this document (examples)
<ul style="list-style-type: none"> • The right to satisfaction of basic needs: to have access to basic, essential goods and services (adequate food, clothing, shelter, health care, education, public utilities, water and sanitation). 	<i>Telecommunications, Electronic Transactions</i>	B.7 Disconnections B.10 Privacy B.11 Acceptable use	Universal service and access

² These were adopted as Consumer Protection Guidelines by the United Nations in 1985 and have since been developed further. For the latest version see *United Nations Guidelines for Consumer Protection (as expanded in 1999)* (UN, 2003) at http://www.un.org/esa/sustdev/publications/consumption_en.pdf.

Right	Acts	Quality of service standards and level of service guidelines	Telecommunications topics outside the scope of this document (examples)
<ul style="list-style-type: none"> The right to safety: to be protected against products, production processes and services which are hazardous to health or life. 	<i>Office of Utilities Regulation, Telecommunications, Disaster Preparedness and Emergency Management</i>	B.12 Emergency access B.13 Disaster mitigation	Electromagnetic emission compatibility
<ul style="list-style-type: none"> The right to be informed: to be given the facts needed to make an informed choice, and to be protected against dishonest or misleading advertising and labelling. 	<i>Fair Competition, Consumer Protection</i>	A.1 Measurement reporting B.1 Information provision B.4 Pricing B.5 Contracts B.6 Accounts B.14 Additional points: internet access B.15 Additional points: premium rate calls and messages B.16 Additional points: mobile electronic transactions B.17 Additional points: phone cards	
<ul style="list-style-type: none"> The right to choose: to be able to select from a range of products and services, offered at competitive prices with an assurance of satisfactory quality. 	<i>Fair Competition</i>	A.4 Equipment installation and maintenance: fixed telephony A.5 Service accessibility and continuity: mobile telephony A.6 Service reliability and speed: internet access B.8 Sales B.9 Advertisements	Network access and interconnection Wholesale pricing Numbering management Spectrum management
<ul style="list-style-type: none"> The right to be heard: to have consumer interests represented in the making and execution of government policy, and in the development of products and services. 	<i>Office of Utilities Regulation</i>		Rule making
<ul style="list-style-type: none"> The right to redress: to receive a fair settlement of just claims, including compensation for misrepresentation, shoddy goods or unsatisfactory services. 	<i>Office of Utilities Regulation, Telecommunications, Consumer Protection</i>	A.2 Customer contact A.3 Complaint handling B.2 Customer contact B.3 Complaint handling	
<ul style="list-style-type: none"> The right to consumer education: to acquire knowledge and skills needed to make informed, confident choices about goods and services, while being aware of basic consumer rights and responsibilities and how to act on them. 	<i>Consumer Protection</i>		
<ul style="list-style-type: none"> The right to a healthy environment: to live and work in an environment which is non-threatening to the well-being of present and future generations. 	<i>Office of Utilities Regulation</i>		Waste equipment disposal Renewable power generation

Figure 1 Consumer rights in the laws

1.7 The scope of quality of service

The term 'quality of service' is understood differently by different people. Historically, it related to aspects of networks as experienced by consumers, such as success in attempts to make calls. Now, to some, it relates to all the characteristics of a service that consumers experience, other than price³. To others, particularly in the Internet Engineering Task Force (IETF), it relates to specific techniques for managing network traffic⁴. In that case the term 'quality of experience' is sometimes then introduced, to cover all the characteristics. The International Telecommunications Union (ITU) distinguishes between quality of service, which relates to the characteristics of a telecommunications service that consumers experience, and network performance, which relates to the characteristics of a telecommunications network⁵. The characteristics are supposed to be measurable, or at least observable.

This document is concerned with the overall consumer experience of telecommunications services. In it, quality of service standards concern characteristics that are quantifiable, such as "the proportion of bills that are paid without complaint" and "the proportion of calls that are set up successfully". These quantifiable characteristics are parameters that define the measurements to be made. The measurements may be objective or subjective, depending on how consumer experience is best predicted economically, consistently and accurately. The measurements may be associated with targets, which are numerical; values that fall short of the targets are regarded as corresponding with an unsatisfactory consumer experience. The parameters, measurements and targets in this document constitute the quality of service standards.

Many characteristics of telecommunications services, such as the clarity of information, are difficult to quantify; others, such as the extent to which actual internet access speeds match claimed speeds, could be made quantifiable and become quality of service parameters. The characteristics that are not parameters in this document may instead have level of service guidelines, designed to lead to satisfactory consumer experience as far as possible. The OUR may choose to make more characteristics quantifiable if doing so would improve the consumer experience.

Ultimately the distinctions between quality of service and other aspects of consumer protection might not be very important: many of the proposals in this document are recognised throughout the world as representing good practices, which every reputable service provider aims to follow.

³ See, for example, *Interactions between competition and consumer policy*, OFT Report 991 (Mark Armstrong, OFT, April 2008) at http://www.of.gov.uk/shared_of/economic_research/oft1058.pdf. This remarks "The term 'quality' can be interpreted very broadly and encompasses hidden charges in the small print, unexpected exclusions in insurance contracts, and so forth." It also provides a useful discussion of the relative contributions of competition policy and consumer policy.

⁴ Thus there are many IETF documents about "integrated quality of service" and "differentiated quality of service" which are now regarded as standard ways of adjusting network performance to fit particular applications and traffic profiles.

⁵ See, in particular, *Definitions of terms related to quality of service*, ITU-T Recommendation E.800 (ITU, September 2008) at http://www.itu.int/rec/dologin_pub.asp?lang=e&id=T-REC-E.800-200809-!!!PDF-E. There 'quality of service' is "The totality of characteristics of a telecommunications service that bear on its ability to satisfy stated and implied needs of the user of the service" and 'network performance' is "The ability of a network or network portion to provide the functions related to communications between users".

2 Investigations of the current level of service

2.1 Summary

The OUR has long had considerable knowledge of consumer attitudes through its complaint handling activities and surveys. In recent investigations the OUR combined this knowledge with that of stakeholders representing consumers and service providers, and extended it through objective and subjective tests of quality. The recent investigations, with their outcomes, are outlined in the rest of this section.

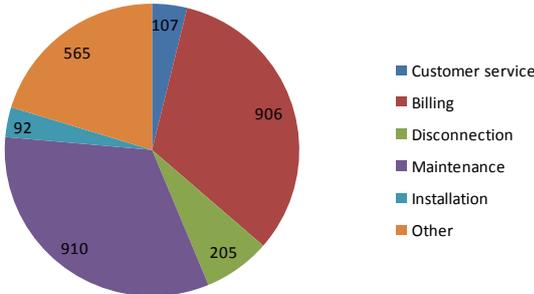
2.2 Complaints

The aspects of quality requiring most attention are those that concern people most. The OUR sought guidance on these aspects from the complaints and other comments made by consumers to:

- Official bodies such as the Consumer Affairs Commission (CAC).
- Representative organizations such as the Consumer Advisory Committee on Utilities (CACU) and the Jamaica Chamber of Commerce (JCC).
- Service providers that accepted invitations to meetings (Digicel, Flow and LIME)⁶.

The OUR held discussions with these official bodies, representative organizations and service providers. It also made quantitative and qualitative analyses of its own records of consumer contacts over many years. These discussions and analyses pointed to various consumer concerns (not just with quality but with prices, for example).

Broadly, the concerns with quality mentioned most frequently in these discussions related to call centre behaviour, complaint handling, billing, disconnection, equipment installation and maintenance (particularly for fixed telephony) and service accessibility and continuity (for mobile telephony); for instance, there were several comments on whether mobile calls could



be set up and kept up.

Figure 2 echoes some findings of these discussions, by showing the consumer contacts received by the OUR, classified according to these concerns and accumulated over four years⁷.

⁶ Other service providers were invited but unable to attend.

⁷ Most of the figures, and the detailed classification under which they are placed, relate to services using fixed infrastructures (electricity, water and fixed telephony). They are not very well suited to mobile telephony, so most of the complaints about mobile telephony are classified as 'other'.

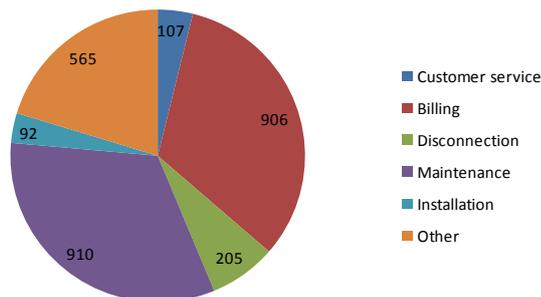


Figure 2 Consumer contacts about telephony with the OUR from 2005 to 2008

Concerns about bills and disconnections included:

- Higher than expected charges for calls.
- Charges for calls to unknown telephone numbers.
- Inability to bar premium rate calls.
- Adjustments to bills for currency fluctuations.
- Difficulties in understanding bills, such as the treatment of General Consumption Tax.
- Inconsistent dates of preparing bills and due dates.
- Inadequate gaps between dates of delivering bills and due dates.
- Disconnections of postpayment customers immediately after failures to pay on time.
- Unexpected expiry of credit.

The OUR intends to deal with these concerns through quality of service monitoring and other consumer protection measures.

In all this the OUR is aware that complaints may not be representative of the problems of consumers generally. In particular:

- They often concern specific difficulties affecting individual people, not continuing inadequacies affecting many people; for instance, complaints about fixed line repair are more common than complaints about voice quality.
- They are most likely to come from particular geographic areas (the major towns) and social groups (the wealthy, the educated and the postpaid service users).

2.3 Surveys

The following surveys of consumer attitudes gave views about quality:

- *Utility Service for All: A Study on Consumers' View of the OUR and the Utility Companies*, July 2006, commissioned by the OUR⁸.
- *Survey Report: Evaluation of telecommunication services in Jamaica* ("the 2006 survey"), September 2006, commissioned by the OUR⁹.

⁸ See *Utility Service for All: A Study on Consumers' View of the OUR and the Utility Companies* (Psearch, July 2006) at http://www.our.org.jm/images/stories/content/ConsumerIssues/Surveys/OUR_Utility_Consumers_Final_Report_CONFIDENTIAL_-_July_4,_2006.pdf.

- *Mobile opportunities: poverty and telephony access in Latin America and the Caribbean: the case of Jamaica*, September 2007, funded by the International Development Research Center (IDRC)¹⁰.
- *Regulating Utility Services in Jamaica– An OUR Consumer Survey* ('the 2009 survey'), July 2009, commissioned by the OUR¹¹.

Though the surveys do not have quality as their main focus they provide some information, particularly about call centre behaviour and complaint handling. According to the 2009 survey, for telephony:

- 48% of residential consumers and 43% of commercial consumers were “very dissatisfied” or “quite dissatisfied” with the call centres to the extent of feeling that improvements were needed¹².
- 37% of residential consumers and 43% of commercial consumers were “very dissatisfied” or “quite dissatisfied” with the time taken to answer calls.
- 24% of residential consumers and 24% of commercial consumers were “very dissatisfied” or “quite dissatisfied” with the time taken to resolve complaints.

Customer service is set in a broader context in the 2006 survey. Figure 3 displays this: the survey respondents indicated whether for fixed telephony they had ever had problems with faults or bills and rated the network clarity and customer service as “poor”, “indifferent” or “good”.

⁹ See *Survey Report– Evaluation Of Telecommunication Services In Jamaica– Office of Utilities Regulation (OUR)– Section I– Residential Consumers* (Market Research Service, September 2006) at <http://www.our.org.jm/images/stories/content/Telecommunications/SurveysandStudies/TelecomSurvey-SectionI-ResidentialCustomersSeptember2006.pdf> and *Survey Report– Evaluation Of Telecommunication Services In Jamaica– Office of Utilities Regulation (OUR)– Section II– Commercial Consumers* (Market Research Service, September 2006) at <http://www.our.org.jm/images/stories/content/Telecommunications/SurveysandStudies/TelecomSurvey-SectionII-CommercialCustomersSeptember2006.pdf>.

¹⁰ See *Mobile opportunities: poverty and telephony access in Latin America and the Caribbean: the case of Jamaica* (IDRC, September 2007) at http://dirsi.net/sites/default/files/dirsi_07_MO_jam_en.zip.

¹¹ See *Regulating Utility Services in Jamaica– An OUR Consumer Survey– Residential* (Advantage Marketing Agency, July 2009) at <http://www.our.org.jm/images/stories/content/Audiovisual/Presentations/ResidentialFinalJuly62009.pdf> and *Regulating Utility Services in Jamaica– An OUR Consumer Survey– Commercial* (Advantage Marketing Agency, July 2009) at <http://www.our.org.jm/images/stories/content/Audiovisual/Presentations/CommercialFinalJuly72009.pdf>.

¹² The other consumers were “very satisfied” or “quite satisfied”.

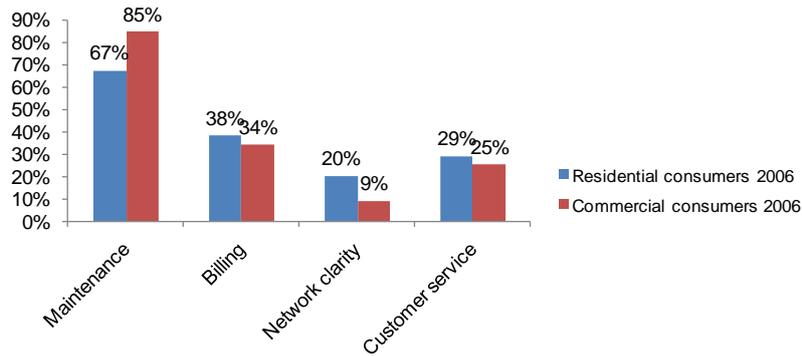


Figure 3 Proportions of residential and commercial consumers in Jamaica naming particular problems as having been experienced with fixed telephony or particular service aspects as being “poor” or “indifferent” for fixed telephony in 2006

In particular, aspects of quality related to the network, such as the ability to set up calls, were acceptable for fixed telephony. By contrast, Figure 4 shows that according to the 2006 survey overall 35% of residential consumers and 46% of commercial consumers had experienced problems with mobile telephony related to the network.

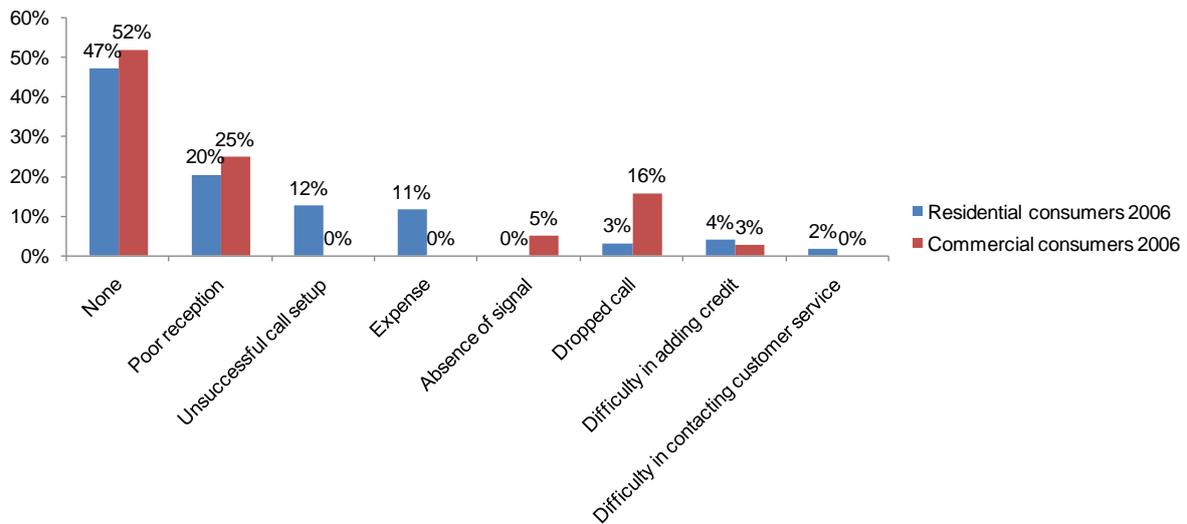


Figure 4 Proportions of residential and commercial consumers in Jamaica naming particular problems as having been experienced with mobile telephony in 2006

The 2006 survey provided similar information about the most frequent problems with internet access. For internet access, however, the 2009 survey provides more recent information, depicted in Figure 5.

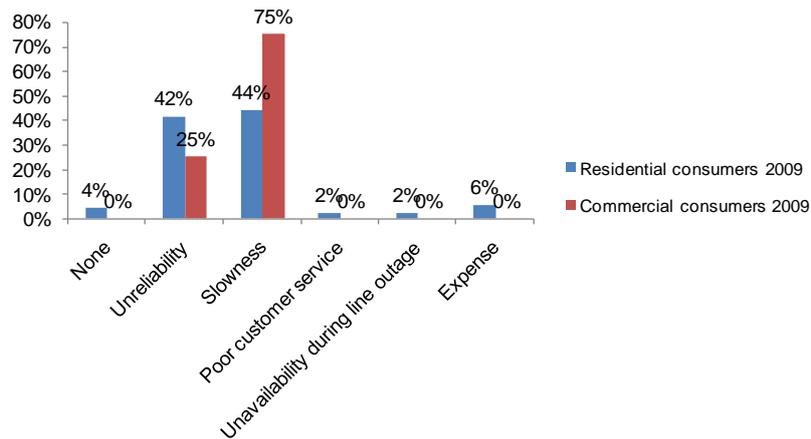


Figure 5 Proportions of residential and commercial consumers in Jamaica indicating particular problems as their main ones with internet access in 2009

There appears to have been a change in consumer attitudes to internet access between 2006 and 2009: in 2006 53% of residential consumers had no problems with the internet access but in 2009 4% of residential consumers had no problems. This change might be due to rising user expectations or to broadening technology choices. There were several developments in internet access markets between 2006 and 2009: by 2009, DSL was not the only technology widely adopted for broadband and dial-up access was declining steeply as a proportion of the whole (from 37% in 2006 to 16% in 2009, according to the surveys).

Surveys can often provide valuable information, but can sometimes be misleading: much can depend on what the respondents expect from services, on how the respondents interpret the questions and on whether the respondents are keen to participate. The survey results about internet access might illustrate this.

2.4 Specific information requests to service providers

The OUR invited the telephony service providers (Claro, Digicel, Flow and LIME) to meetings to understand their approaches to quality of service. Following these meetings the OUR issued formal information requests to the service providers about their existing internal service standards, quality assurance programmes, quality measurements and quality levels. The requests asked for answers to the questions listed in Annex F about:

- Call centre behaviour and complaint handling (for fixed and mobile telephony).
- Equipment installation and maintenance (for fixed telephony).
- Service accessibility and continuity (for mobile telephony).
- Service reliability and speed (for internet access).
- Disaster mitigation (for fixed and mobile telephony).
- Service performance (for internet access).
- Premium rate services (for fixed and mobile telephony).

The OUR also sent the requests for information about internet access to the Internet Service Providers (ISPs) Infochannel, Cybervale and Anbell.

The OUR has used the responses in formulating the proposed quality of service standards.

2.5 Call centre tests

To check repeated comments on the customer service offered by the service providers the OUR tested the service providers' call centres in a form of mystery shopping. Between April and June 2010 staff of the OUR made 318 test calls to the call centres of Claro, Digicel, Flow and LIME at different times on working days and assessed calls according to:

- After how long calls were answered.
- After how long calls that were answered provided contact with live agents (after selecting appropriate menu options).
- The courtesy of live agents (on a scale comprising "very dissatisfied", "dissatisfied", "neutral", "satisfied" and "very satisfied").
- The adequacy of the information from live agents (on a scale comprising "very dissatisfied", "dissatisfied", "neutral", "satisfied" and "very satisfied").

The results of the assessments of answering times included the following:

- For three service providers, 98% of the calls were answered; for the other one, only 92% were answered. When customer service calls are free of charge (as these were), they should be answered, as then they can at least provide simple information, accessible through menus, without contact with live agents.
- For two service providers, 95% of the calls provided contact with live agents; for the other two, only 80% did so.
- For one service provider, 75% of the calls provided contact with live agents after 20 seconds; for the other three, only 55%-60% did so. Still, for two of these three, 75% of the calls provided contact with live agents after one minute. The exception had several very long delays (with calls lasting, on average, two or even three times as long as calls to the other service providers), so only 75% of its calls provided contact in two minutes and only 80% of its calls provided contact in three minutes.
- For three service providers, 90%-95% of the calls that provided contact with live agents did so in one minute; for the other one, only 70% did so. Thus one service provider could not give the simple advice "almost everyone who gets a live response does so in one minute, so try again later if there is no live response by then".

The courtesy and the adequacy of the information were such that¹³:

- In 75%-85% of the contacts with live agents the caller was "satisfied" or "very satisfied" with the courtesy.
- In 75%-85% of the contacts with live agents the caller was "satisfied" or "very satisfied" with the adequacy of the information.
- In 70%-75% of the contacts with live agents the caller was "satisfied" or "very satisfied" with both the courtesy and the adequacy of the information.

2.6 Drive around tests

To evaluate the status of the mobile telephony networks the OUR commissioned tests of all three mobile telephony services throughout the country. In May 2010 suitably trained people acting on behalf of the OUR performed extensive drive around tests on working days

¹³ There were apparent differences between service providers in the courtesy shown and the adequacy of the information given. However, these are not reported here, because the samples are fairly small and the assessments are subjective.

throughout the country. They attempted to make 3166 calls from moving cars in seven different areas to mobile telephones in a building in Kingston and counted the numbers of calls that failed according to each of the following criteria:

- The calls were not set up successfully.
- The calls were set up successfully but did not stay up for two minutes.
- The calls were set up successfully and stayed up for two minutes but had “poor” voice quality (on a scale comprising “poor”, “indifferent” and “good”).

The tests did not distinguish between congestion and inadequate signal strength as reasons why calls were not set up successfully. The distinction is unimportant to people travelling throughout the country, though not to people staying in one area.

The calls used inexpensive handsets which were sold by the relevant service providers¹⁴. On successive days the calls were attempted on major routes through the following areas:

- Kingston, Saint Andrew and Saint Thomas.
- Saint Andrew, Saint Mary and Saint Ann.
- Manchester, Clarendon and Saint Catherine.
- Saint Elizabeth and Westmoreland.
- Hanover, Westmoreland and Saint James.
- Saint James, Trelawny and Saint Ann.
- Kingston, Saint Andrew and Portland.

There were enough tests that the differences between the service providers, between different areas of the country, and between on-net and off-net calls could all be assessed very confidently¹⁵. The results showed marked differences between service providers and between areas: often one service provider is “best”, in being responsible for significantly fewer failed calls, and sometimes another service provider is “worst”, in being responsible for significantly more failed calls, but the “best” and the “worst” are different in different areas. The results of the tests included the following:

- No service provider is “best” throughout the country.
- In most areas, one service provider is “best” (but the “best” service provider is different in different areas).
- In most areas, the failed calls are chiefly those that were not set up successfully (and are otherwise usually those that had “poor” voice quality).
- In most areas, between 13% and 35% of on-net calls fail when made from the network of the “worst” service provider.
- In most areas, between 20% and 35% of off-net calls fail when made from the network of the “worst” service provider.
- In some areas, some service providers have too little access capacity (to judge from the proportion of failed on-net calls).

¹⁴ For Claro and LIME the handset type was Nokia 1208; for Digicel it was Nokia 1661.

¹⁵ Statistically, 95% of the time the difference between the percentage of on-net calls, off-net calls or all calls that failed (according to the criteria above) for one service provider in one area and the corresponding percentage for another service provider in the same area would not be due to chance.

- In several areas, some service providers have too little interconnection capacity (to judge from the proportion of failed off-net calls).

Some of these results might become obsolete quite quickly if extra capacity were introduced. As traffic grew by about 20% in 2009, the service providers might have underestimated demand when planning their networks. However, the sharp differences between the “best” and the “worst” service providers in each area suggest that drive around test results should be published for each service provider in each area. Doing this might itself improve matters, by encouraging new customers to sign up for the least congested network in their area.

2.7 International comparisons

Quality of service standards from another country are most relevant to Jamaica if that country resembles Jamaica in demography, economy and telecommunications market structure. Of course, no country does this in all respects. The following do so in several respects:

- **Trinidad and Tobago.** This has a population density that is 105% that of Jamaica and a population that is 50% that of Jamaica. It has seven fixed telephony providers (three with national concessions), two mobile telephony providers and about four ISPs.
- **Saint Vincent and the Grenadines.** This has a population density that is 115% that of Jamaica and a GDP per head that is 115% that of Jamaica (adjusted for purchasing power parity)¹⁶. It has two fixed telephony providers, two mobile telephony providers and about ten ISPs.
- **Botswana.** This has a population that is 70% that of Jamaica and a GDP that is 125% that of Jamaica (adjusted for purchasing power parity). It has one fixed telephony provider, three mobile telephony providers and about twenty ISPs.
- **Bahrain.** This has a population that is 40% that of Jamaica and a GDP that is 85% that of Jamaica (adjusted for purchasing power parity)¹⁷. It has ten fixed telephony providers (mostly without national operations), three mobile telephony providers and about twelve ISPs.

All these countries are close to Jamaica in international rankings of the demographic or economic indicators cited for them here: they often lie within five places of Jamaica and always lie within fifteen places.

In Annex C there are brief comparisons of the quality of service standards and level of service guidelines of these countries with those proposed by the OUR. Obviously comparisons with different countries, even when they resemble each other, need to be treated cautiously. However, they can have value in suggesting what is feasible and useful.

2.8 Analyses of existing contracts

People are often unaware of the exact terms of their contracts and of changes to those terms. Because of the importance of this topic, in the recent investigations the OUR had a review of the current contracts of some service providers. The resulting document placed provisions in one existing contract into correspondence with provisions in another and commented on more and less satisfactory provisions. Various parts of the contracts

¹⁶ Dominica, Grenada and Saint Lucia, which are also member states of the Eastern Caribbean TELEcommunications authority (ECTEL), resemble Jamaica in one or other of these respects, too.

¹⁷ The figures include the migrant workers on the island of Bahrain from south Asia.

represent good practices; as such, they have been used in developing the guidelines in this document. However, others fall short of what is possible.

Examples of contract terms that the OUR considers to be unsatisfactory, along with comments on the examples, are given in Annex D¹⁸. They are placed in the following classes:

- **Unbalanced terms.** These appear to favour the interests of the service providers unduly over those of the consumers. Some of them might have causes lost in history and could be amended now without difficulty.
- **Inadequate or incomplete terms.** These describe situations that consumers might wish to avoid (such as having their telephone numbers made publicly available) without indicating how, or even whether, consumers can do so.
- **Legally suspect terms.** These could be found to be unfair or counter to the law. If they remain until they are tested in court they could create unnecessary anxiety and uncertainty, for consumers and service providers alike.
- **Poorly worded terms.** These could be reworded, to improve their clarity without weakening the protection that they give to the service providers.
- **Obsolete or superfluous terms.** These could be omitted or shortened, to help with focussing on the relevant terms without losing anything that is still relevant and not already provided by the law.

The contracts reviewed made no commitments about quality of service. Though one service provider has published a customer charter, indicating circumstances in which customers can claim compensation for poor quality, there is no mention of that in the contract (perhaps because it was introduced after the contract). Though the service provider also mentioned compensation in another contract, it placed a very low limit on the level of compensation.

¹⁸ These examples are drawn from the contracts of particular service providers. However, they should not be taken to indicate that the contract terms of those service providers are generally less satisfactory than those of other service providers. All service providers are urged to examine and amend their contracts taking into account these examples and the associated comments.

3 Principles for monitoring the quality of service

3.1 Summary

The treatment of quality of service monitoring by the OUR is motivated by the outcomes of the recent investigations. It is also constrained: the OUR wishes to make information available about achieved and acceptable quality levels without imposing significant burdens on service providers. What this entails is discussed in the rest of this section.

3.2 Constraints

The OUR is basing its proposals for quality of service monitoring on the following principles for the parameters (or indicators) to be monitored, the measurements to be published and the targets (or minimum standards) to be set:

- **Parameters.** These should relate to the aspect of services that have the biggest impact on users, they should be well defined and be cost-effective to service providers. For this reason, where possible they should have methods of measurement that are already used consistently by the service providers. They should also reflect differences between services and between geographic areas (for example), where these are significant.
- **Measurements.** These should relate to aspects of services that users experience directly (not the underlying technical causes). Some measurements are used mainly for looking at trends in service development; others are also published. Publication of measurements should ensure that they reach intended audiences, that they are easily understood without being misleading, and that they allow for comparison between service providers.
- **Targets.** These should relate to the quality users want. They should avoid limiting consumer choices: the displacement of fixed telephony by mobile telephony shows that many people prefer more convenience even with higher prices and lower quality. Also, where possible they should be derived from earlier measurements by the service providers, used in other comparable countries or proposed in international standards.

The OUR intends to start with few parameters and to add others if they become desirable and practicable. For these parameters it is defining the measurements to be reported and setting targets.

3.3 Markets

In most countries quality of service regulations are concerned with retail services not wholesale ones, with quality of service monitoring for wholesale services being considered through interconnect agreements (though Trinidad and Tobago is an exception)¹⁹. The motivations for quality of service monitoring for wholesale services are slightly different from those for quality of service monitoring for retail services. They are as follows:

- Quality of service monitoring for wholesale services provides some consumer protection when component-by-component standards are combined to give end-to-end standards; for instance, an end-to-end successful call ratio depends on the successful call ratio in individual networks. Similar remarks apply to customer service as well as to network operation; for instance, the time taken by a reseller to resolve a complaint is affected by the time taken to obtain any relevant information from the original service provider.

¹⁹ For another exception, from Nigeria, see *Quality Of Service Regulations 2008* (NCC, 2008) at http://www.ncc.gov.ng/RegulatorFramework/Quality_of_Service_Regulations.pdf .

- Quality of service monitoring for wholesale services provides competitor protection when services for resale or integration are obtained from dominant suppliers. In particular, the time taken to obtain a network component such as a leased line or an unbundled local loop can be crucial to the viability of the business. In these situations minimum standards can be appropriate. However, such standards are only part of the competitor protection needed, as service supply is easily obstructed²⁰.

Some consumer protection can be provided by end-to-end quality of service monitoring for retail services, if its interconnect agreements reflect its requirements. Some competitor protection can be provided in interconnect agreements, if the parties have approximately equal strength. In Jamaica, interconnect agreements are often closely related to the CWJ Reference Interconnect Offer (RIO), which already specifies quality of service standards for wholesale services (through the Joint Working Manual and the Parameter Schedule).

Bearing this, and related points, in mind, the proposals in this document are limited in scope to services for which the service provider has at least 10,000 connected customers. This limitation has the following implications:

- The proposals cover only retail services, not wholesale ones. The OUR has not received comments from customers of wholesale services suggesting that the quality of service arrangements for those services in interconnect agreements are unsatisfactory, so in this document the OUR is not proposing extra quality of service monitoring for wholesale services.
- The proposals cover only services without contract terms specific to the customer. Accordingly publicly available residential and commercial services are covered if they have enough customers, but services designed for particular customers are exempted.
- The proposals cover only services offered by Claro, Digicel, Flow or LIME. In particular, internet services offered by other providers, and any services offered by resellers, are exempted. Some costs of compliance are independent of the number of customers and might bear heavily on these smaller service providers.
- The proposals cover only fixed telephony, mobile telephony and internet access. In particular, they do not deal with toll-free calls, which many commercial customers responding to the 2006 survey appeared to regard as unsatisfactory; the OUR intends to make enquiries and to introduce regulation if competition seems unable to resolve problems.

In addition the proposals ignore distinctions between services (whether residential and commercial, wireline and wireless or narrowband and broadband) when the service providers, and therefore many of the intended customers, do so²¹.

3.4 Measurement times

Measurements related to calls are often required to be made in variants of the busy hour²². This hour can vary between services and between days of the week. For some purposes

²⁰ For instance, validation procedures before service supply might require that service requests contain customer addresses that match exactly those in the billing database, though such addresses are often slightly wrong.

²¹ In ignoring such distinctions the OUR is not making formal market definitions.

²² The busy hour is the hour of the day during which the traffic is greatest. It can change from day to day. For measurement and prediction purposes, variants of it can be more convenient. Of these, the commonest is the time consistent busy hour, which is the hour, starting at the same time for all the days in a period, during which the traffic is greatest when averaged over all occurrences of the hour.

(such as assessing call centre response times) reporting measurements of the busy hour might be less appropriate than reporting measurements over the whole working day. For other purposes (such as assessing mobile telephony voice calls in drive around tests) restricting measurements to the busy hour leaves measurement resources underutilised at other times and therefore increases costs. In general the OUR proposes that measurements be made over the whole working day, not just in the busy hour.

3.5 Reporting periods

Measurements are reported by service providers periodically, at the end of each 'reporting period'. In some countries the reporting period is one month and in others it is twelve months, but it is most commonly three months. This is perhaps the shortest period in which seasonal variations in quality, or the effects of actions to improve quality, will be perceived by users as a whole. A short reporting period is appropriate in a market that is developing rapidly.

The OUR proposes that the reporting period be three months for measurements of parameters by service providers. However, measurements of parameters made by or on behalf of the OUR would be annual except where they were intended for validating the measurements reported by the service providers.

3.6 Reporting areas

Measurements are reported by service providers separately for each 'reporting area'. The OUR prefers that reporting areas be separated where quality is likely to be very different. In many cases no differences in quality between areas have been established (though they might well exist), so in the interests of simplicity the OUR proposes that measurements be reported for the country as a whole. The only exception, currently, relates to the drive around tests, which showed great differences between areas.

3.7 Reporting formats

The OUR proposes that service providers submit their reports electronically in a tabular format.

3.8 Auditing techniques

The OUR assumes that the senior management of a service provider takes full responsibility for the accuracy of measurements, typically to the extent of having internal auditing by trained staff.

Nonetheless the OUR might still want to audit measurements independently. It intends to do this by making its own spot checks (of call centre behaviour, complaint handling or mobile service performance, for example) or making requests for information to the service providers. If it has reason to consider that the reported measurements do not match what is available to users then it may publicise its own information, with or without the reported measurements.

3.9 Publication formats

Publishing measurements should help consumers to choose services guided by facts, not just anecdotes. The OUR may publish measurements (whether reported by the service providers or made by itself) at any time in any way that might help consumers to make informed choices. In particular:

- The measurements might be published in radio broadcasts, television broadcasts, press articles or web pages.

- The measurements might be published in weighted combinations or summaries (as numbers of stars, for example) and without irrelevant or potentially misleading detail (such as statistically insignificant decimal places), to avoid overwhelming users.
- The measurements might be published along with information that is not confidential and that is potentially helpful to consumers; this information is likely to cover any corresponding targets, the prices in popular packages, and any special circumstances affecting the measurements.

The information about special circumstances published along with the measurements might relate, for example, to the following:

- Circumstances beyond the control of the service provider.
- The dependence of the service provider on networks and support systems due to another service provider.
- The extent to which the services being compared in the published measurements were substitutes for one another

3.10 Incentives

If a service provider does not fulfil its quality of service obligations, the OUR may take the following steps:

- It may publicise deficiencies to consumers.
- It may require the service provider to supply an improvement plan or to report extra measurements (perhaps with shorter reporting periods or smaller reporting areas).
- It may introduce guaranteed standards, so that individual customers can receive compensation for breaches.
- It may introduce quality factors into price caps.
- It may apply for the service provider to be convicted and fined.
- It may recommend the suspension or revocation of the licence of the service provider.

The OUR prefers that measurements, and failures to meet targets, be published (and, where appropriate, publicised). It wishes to avoid limiting consumer choices, so it regards the targets as recommendations, not as requirements. Nonetheless it may require a service provider to supply an improvement plan or to report extra measurements.

In the experience of the OUR compensation schemes are most likely to be effective if they require compensation to be made automatically, without any need for customers to make claims. For some services (such as those using calling cards independent of customer accounts) this is not feasible; for others it might need changes to operation support systems and equipment monitoring practices. Accordingly the OUR is not proposing guaranteed standards for telecommunications at this stage. However, it might introduce them if in practice additional incentives are needed for compliance. For other utilities, if customers received compensation for all breaches of the guaranteed standards, the monetary implications would be quite noticeable.

Similarly, the OUR is not proposing quality factors in price caps in this document, though it is aware that they have been used in some countries for several years²³.

3.11 Exceptions

In circumstances beyond the control of service providers the OUR may suspend the requirement to report measurements, if the ability of service providers to report measurements is impaired or the measurements that could be reported would not represent the quality of service normally offered. The OUR expects that such circumstances will be ones where, despite due diligence by service providers, there remain effects of:

- Natural disasters.
- Civil unrest.
- Vandalism or theft.
- Industrial disturbances.
- Wars.
- Arrest or restraint of government.
- Economic embargoes.
- Fires or explosions.
- Breakdown of telecommunications outside Jamaica.

In these and other special circumstances affecting measurements service providers may apply to the OUR to have information included along with any published versions of the measurements. This information would explain, for example, why the measurements were incomplete or did not represent the quality of service normally offered.

²³ For an example, from Colombia, see *Resolución 2353 de 2010* (CRC, January 2010) at <http://www.crcom.gov.co/images/stories/crt-documents/Normatividad/ResolucionesCRT/00002353.pdf>. The quality factor involves raising quality indices for different parameters to a certain power (which was 0.25 between 1997 and 2005, when it became 0.20); the quality indices are calculated by mapping measurements of the parameters on to truncated linear scales between 100% (for more satisfactory quality) and 50% (for less satisfactory quality).

4 Proposals for monitoring the quality of service

4.1 Summary

The investigations by the OUR indicate that there is clear and demonstrable consumer detriment due to poor quality and that quality is a regulatory issue to which effort should be applied. There are specific concerns about fixed telephony, mobile telephony and internet access, as well as general concerns about customer relations that to some extent are independent of the service.

The major concerns are discussed in the rest of this section; other concerns exist or might develop over time, but the OUR proposes at this stage to concentrate on the concerns that are seen as major now for the main service providers (Claro, Digicel, Flow and LIME). The resulting quality of service measurements and targets are defined more precisely in Annex A. Annex A takes precedence over this section if there are conflicts of interpretation.

4.2 Customer contact

Representative organizations and consumer surveys indicated concerns about the time taken by call centres to answer customer service calls. The mystery shopping undertaken by the staff of the OUR showed that for some service providers too many calls do not provide contact with call centre agents soon enough: some are not answered at all, some are answered but then ended, and some are answered but then kept on hold for several minutes.

There are also concerns about the courtesy shown, and the adequacy of the information given by, call centre agents. The mystery shopping undertaken by the staff of the OUR suggested that 25%-30% of calls were unsatisfactory in at least one of these respects.

A call centre typically has an objective of answering a certain proportion of calls in a particular time (or sometimes of answering calls, on average, in a particular time). For some services, such as express delivery, this objective might be to answer 90% of calls in 10 seconds²⁴. For other services, widespread objectives are to answer 80% of calls in 20 seconds and 90% of calls in 30 seconds; beyond such times callers become impatient and might abandon calls. The telecommunications service providers in Jamaica have objectives like these. The interpretation of the objectives might vary between service providers, according to whether an invitation to select a menu item is regarded as an answer. For calls that are free of charge, the measurement of most interest to the OUR is actually the time taken before the caller can speak to a live call centre agent or otherwise obtain information, after selecting items from menus if necessary.

There are various ways in which service providers can assess the degree of satisfaction of callers with customer service calls; in particular, they can count the cases that are closed to the satisfaction of the callers by the staff answering the initial calls without recourse to other people, by asking the callers directly or, for samples, through third parties. Often service providers aim to have 80% of cases closed in the initial call; the OUR is not currently proposing such a target, because its value depends on whether information can be obtained more easily from the call centre than from other sources.

The OUR proposes to require that telecommunications service providers:

- Report to the OUR the proportion of customer service calls that let callers speak to live call centre agents or otherwise obtain information in 20 seconds.

²⁴ In fact the average time taken to answer calls is two seconds for some such services.

- Take note of the minimum value set by the OUR as a target for this proportion, which is 80%.
- Report to the OUR the proportion of customer service calls that are dealt with to the full satisfaction of the caller by the first point of contact.

The OUR also intends to conduct, and publish the results of, more mystery shopping when necessary, to validate the reports of the service providers. In doing this the OUR will:

- Measure the proportion of customer service calls that let callers speak to live call centre agents or otherwise obtain information in 20 seconds.
- Measure the proportion of customer service calls that are dealt with to the full satisfaction of the caller by the first point of contact²⁵.

Currently at least 60% of consumers contact telecommunications service providers by making voice calls; the remainder do so in writing or by visiting retail offices²⁶. The OUR is not currently proposing formal quality of service measurements for these other methods of contact, for various reasons²⁷.

4.3 Complaint handling

There have been several adverse remarks about the frequency of complaints and on the time taken to resolve complaints, especially in relation to bills and disconnections. There are potentially difficulties in definition: a contact with a call centre might be intended as a complaint by the customer but regarded as an enquiry by the service provider, and an enquiry immediately answered at a retail office might not be included in any count by the service provider.

Service providers are naturally unwilling to accept that calls are wrongly charged to customers, even though this can happen (through mistakes by employees or theft of service, for example). In some countries of the European Union (EU) service providers must have their metering and billing systems tested and audited regularly. This lead has been followed occasionally elsewhere, so that billing problems can be handled proactively²⁸. It requires considerable expertise and expense; to be fruitful it must consider the human functions in the metering and billing systems, as the errors tend to have human causes, not mechanical ones. A common alternative, which the OUR proposes, is to include among the targets mentioned above ones for complaints about accounts. Billing problems are then handled reactively: if the target for the number of complaints or the average time taken to resolve complaints is not met the OUR can request an improvement plan from the service provider.

²⁵ This proportion is likely to be higher than the proportion reported by the service provider, because the customer service calls in mystery shopping will mainly comprise service enquiries, not customer complaints, service orders or fault reports.

²⁶ The figure is based on those from various service providers and is corroborated by the OUR consumer relations unit. Some service providers report very much higher proportions of contact through voice calls.

²⁷ In particular, quality of service measurements designed to encourage shorter queueing times at retail offices might have adverse effects unless they were accompanied by requirements on the numbers of retail offices: on their own, they could encourage the use of larger retail offices with larger catchment areas and therefore with longer travelling times for customers.

²⁸ For an example, from India, see *Quality of Service (Code of Practice for Metering and Billing Accuracy) Regulation 2006* (TRAI, March 2006) at <http://www.trai.gov.in/trai/upload/Regulations/44/regu21mar06.pdf>.

Disconnections form another common subject of complaints to the OUR. Payment deadlines may be unreasonable and disconnections too hasty, especially as paper bills are not delivered fast. Some service providers suggested that many stories about poor delivery of paper bills are not based on fact and do not withstand scrutiny. However, others noted that delivery can be greatly improved by outsourcing the human functions and implementing electronic delivery (though electronic mail and even to televisions). As with bills, the OUR proposes to include among the targets mentioned above ones for complaints about disconnections and to request an improvement plan from the service provider if a target is not met.

The OUR proposes to require that telecommunications service providers:

- Report to the OUR the numbers of customer complaints per 100 connected customers during the reporting period, separated according to a particular classification of customer complaints.
- Take note of the maximum values set by the OUR as targets for these numbers , which are 5 for customer complaints in total, 1 for customer complaints about accounts and 1 for customer complaints about disconnections.
- Report to the OUR the proportions of customer complaints that are resolved in 15 working days and 30 working days, separated according to a particular classification of customer complaints.
- Take note of the minimum values set by the OUR as targets for these proportions, which are 80% and 95% (respectively) for customer complaints in total.

The clarity and fairness of contracts can affect how many problems there are with accounts and disconnections. The OUR is willing to help service providers to improve their contracts by examining them individually. It is also putting forward general guidelines about contracts in this document.

4.4 Equipment installation and maintenance: fixed telephony

There is little to suggest that consumers are greatly worried by the quality of communications using fixed telephony. In particular, in complaints and surveys about fixed telephony consumers do not raise problems such as failures to set up calls or difficulties in hearing callers. They are instead concerned about equipment installation and maintenance: the OUR heard several comments about excessive delays in, and missed appointments for, installing connections and repairing faults.

Service interruptions are responsible for many complaints about fixed telephony. They have many possible causes, such as theft of equipment and accidental or deliberate damage, which service providers can safeguard against in ways that are more or less effective. For customers the first measure of service interruptions is how often faults are noticed, and the second is how long faults take to be repaired.

To some extent these problems are addressed by internal standards of the service providers, though these standards are not always publicly available. For instance, the service providers typically supply rebates on request to postpaid customers if faults last too long or are too frequent. However, often rebates must be explicitly requested by customers and are not provided automatically. This is likely for rebates about faults in parts of networks that are not automatically monitored by the service provider, such as master jacks and cable modems: occasional routine checking might not reveal faults fast enough.

The OUR proposes to require that fixed telephony providers:

- Report to the OUR the proportions of connections installed in 5 working days and 10 working days.
- Take note of the minimum values set by the OUR as targets for these proportions, which are 80% and 95% (respectively).
- Report to the OUR the number of fault reports per 100 connected customers during the reporting period.
- Take note of the maximum value set by the OUR as a target for this number, which is 5.
- Report to the OUR the proportions of faults repaired in 24 hours and 48 hours.
- Take note of the minimum values set by the OUR as targets for these proportions, which are 80% and 95% (respectively).

Because occasional routine checking might not reveal faults fast enough the OUR envisages using numbers of fault reports to assess network availability. Doing this might overestimate network availability, because it does not weight properly faults that affect more customers than report them. Moreover, the targets for the proportions of faults repaired in given times and for the numbers of fault reports are fairly modest. For instance²⁹:

- If the targets are just met then the average time taken to repair a fault is about 16 hours and the availability is about 99.96%.
- If the average time to repair a fault becomes about a half of a working day but the number of fault reports stays the same then the availability becomes 99.99% (commonly known as “four nines”).
- If the average time to repair a fault becomes about a quarter of a working day and the number of fault reports falls by a factor of five then the availability becomes 99.999% (commonly known as “five nines”).

In some countries regulators require service providers to report on, and meet targets for, the proportion of missed appointments for installing equipment and repairing connections³⁰. However, the OUR does not currently require this for other utilities, and the evidence for missed appointments for telecommunications is rather limited. On balance the OUR does not propose requiring it at this stage.

4.5 Service accessibility and continuity: mobile telephony

The quality of communications (as opposed to equipment installation and maintenance) seems to be satisfactory for fixed telephony. However, it does not seem to be so for mobile telephony: service accessibility and continuity are unsatisfactory in various areas of the country.

The drive around tests on behalf of the OUR showed that overall about 13% of calls between mobile telephones failed. However, behind this aggregate figure is a very patchy picture, with

²⁹ These calculations assume for simplicity that fault repair times have a negative exponential distribution, so the average time taken to repair a fault can be estimated to be $t/\ln(1/(1-p))$ and the availability for a connected customer can be estimated to be $1-n/100*(4/(365*24))^t/\ln(1/(1-p))$, where n is the number of faults per one hundred connected customers in three months, p is the proportion of faults cleared within t hours of being reported and \ln is the natural logarithm function. In fact the times might not be independent of each other and might be influenced by working practices and indeed the required targets.

³⁰ For an example, from Australia, see *Customer Service Guarantee Standard 2000 (No.2) fact sheet* (ACMA, October 2006) at http://www.acma.gov.au/WEB/STANDARD/pc=PC_1712.

some service providers performing much better than others in different areas. The tests also indicated the quality of communications that can be made available in the country: the “best” service provider in any area usually had fewer than 7% of calls fail for any of the tested reasons (whether the calls are just on-net, just off-net or both on-net and off-net), and occasionally had almost no calls fail.

Mobile telephony providers often perform their own drive around tests. However, these are not comparable between service providers because they happen at different times and places. Fair public comparisons require tests to be done at the same times and places, as happens when the tests are done on behalf of all the service providers at once³¹.

Mobile telephony providers have other ways of assessing their networks that can be used for fair public comparisons. In particular, they usually measure the times during which base stations are working properly, and the extent to which signalling (“SDCCH”) channels and traffic (“TCH”) channels are available on request and are retained throughout calls. Such measurements can provide estimates of the proportions of national calls set up successfully and staying up for long enough. However, they are less helpful to users, and also to network planners in some respects, than drive around tests, because:

- They sometimes take slightly different views of when base stations are working properly: each sector of a base station should be treated separately and should be regarded as having failed if its emitted signal strength falls below minimum planned levels.
- They typically just provide averages over all calls, irrespective of the times of calling and the locations of the call participants.
- They sometimes use slightly different information on different makes of network equipment; for instance, some equipment might not distinguish between uses of signalling channels for calls and uses of signalling channels for messages
- They are unable to take into account the reactions of users; for instance, they do not count calls that fail because network signals are inadequate or calls that are ended by users prematurely (in less than two minutes, for example) because voice quality is poor.

Nonetheless assessments of networks using network equipment can be valuable. The OUR proposes to require that mobile telephony providers:

- Report to the OUR the proportion of time when network signals are usefully accessible.
- Report to the OUR the proportion of national calls set up successfully when network signals are usefully accessible.
- Take note of the minimum value set by the OUR as a target for this proportion, which is 96% (or at most 4% for the proportion failing before set up).
- Report to the OUR the proportion of national calls staying up until ended normally by users.
- Take note of the minimum value set by the OUR as a target for this proportion, which is 97% (or at most 3% for the proportion failing before normal termination).

³¹ For an example, from France, see *La qualité de service des réseaux mobiles (voix et données) en France métropolitaine* (ARCEP, February 2009) at http://www.arcep.fr/uploads/tx_gspublication/enqt-gsmobile-fev2009.pdf. The tests vary between years; in 2009 separate tests were performed inside buildings, outside buildings and inside vehicles in 52 towns (the twelve largest and forty smaller), inside vehicles on busy highways and inside trains (both high speed and suburban).

The OUR intends to conduct, and publish the results of, further drive around tests while there remain areas where quality is unsatisfactory. These tests will assess the proportions of on-net and off-net calls that fail for different service providers and in different areas of the country. They will be conducted when necessary (in particular, as spot checks in response to requests or statements by service providers or consumers). In doing this the OUR will:

- Measure the proportions of occasions when network signals are usefully accessible.
- Measure the proportion of national calls set up successfully when network signals are usefully accessible.
- Measure the proportion of national calls staying up for two minutes after being set up successfully.
- Measure the proportions of national calls having “poor”, “indifferent” and “good” voice quality while staying up for two minutes³².

The OUR proposes to recommend that mobile telephony providers also conduct drive around tests and report the results to the OUR.

In principle assessments of voice quality could be objective; for instance, listening voice quality could be assessed through the use of Perceptual Evaluation of Speech Quality (PESQ)³³. However, the OUR intends to use subjective assessments by the test participants, so that the tests do not need the provision of specialised equipment. The assessment of voice quality in this instance is motivated by noting that poor voice quality in a mobile network very often takes the form of broken up speech and is therefore symptomatic of connections that are likely to be dropped by the network.

Text messages, as well as voice calls, are very important to consumers. Text messages can fail for some of the same reasons as voice calls, and sometimes for other reasons, too. If the OUR receives any evidence that text messages are failing for these other reasons, it will consider extending the tests to assess the proportions of on-net and off-net text messages that fail.

4.6 Service reliability and speed: internet access

Representative organizations and consumer surveys suggested that internet access was unreliable or slow. However, user perceptions appear to change between surveys. Also, the services are diverse: some consumers might want just email at low prices while others might be willing to pay higher prices for greater reliability and higher speeds.

Unreliability might refer to connection faults or speed variations³⁴. So far as it refers to connection faults, quality of service monitoring for fixed telephony is relevant to it, at least for Digital Subscriber Loop (DSL) and cable modem connections.

For all connections, the perceived speed depends on the customer premises wiring and the customer premises equipment, including the personal computer; it is also influenced by the

³² The voice quality is “poor” if speech is broken up badly in ways that are common in calls that networks ultimately drop.

³³ However, PESQ assess listening voice quality only. It can be accompanied by measurements of voice delay (speech sample transmission time), to counteract some of its limitations in assessing conversational (two-way) voice quality.

³⁴ For dial up internet access it might also refer to problems with establishing and maintaining sessions. However, though one mobile telephony provider counts large numbers of dial up internet access users, in general the importance of dial up internet access is believed to be diminishing fast.

bandwidth available in the core network³⁵. Users might well attribute low speed wrongly to the connections instead of the computers and the active programs. In addition:

- For a DSL connection, the speed is influenced by the length and soundness of the copper access line and by the number of people actively sharing the system from the DSL access modem to the core network. If it installs the customer premises equipment, the service provider might test, and charge only for, the achieved speed, but if (as is now usual) the customer installs the equipment the service provider is unable to test the achieved speed so readily.
- For a cable modem connection, the speed is influenced by the number of people actively sharing the system from the Cable Modem Termination System (CMTS) node to the core network.

In general, not all of the factors causing internet access to appear unreliable or slow are under the control of the service provider.

There are applications available for assessing speeds, by testing traffic to and from selected servers. The tests most commonly used by consumers are ones that assess the speeds of file downloads and uploads. ISPs often provide such speed tests for their customers. However, many of these speed tests require actions by the end user; they do not execute automatically or maintain records of results. Several do not make enough information available about their test methods and fail to execute properly with certain browsers. Some select as their servers ones on the networks of particular service providers in Jamaica, so they might well not provide representative assessments for other service providers.

The OUR proposes to recommend that ISPs themselves, along with the OUR, encourage the use of an application that executes automatically and maintains records of results, in ways that are independent of the ISP servers and the browsers³⁶. The proposed application can be used to:

- Report the average speed of web downloads from various international servers, to provide an indication of the speed of web browsing.
- Report the average time taken by “ping” echoes from various international servers, to provide an indication of the potential for game playing (and of conversational voice quality for voice over the internet).
- Report the average time taken by IP address look ups at the servers used by the ISP, to provide an indication of the performance of this component of almost every interaction using the internet.

The OUR proposes to recommend that ISPs also use the application and report the results to the OUR.

The information can be obtained automatically every day when the customer is using internet access. It can also be accumulated to provide comparisons between the services of different ISPs.

The tests assess some important aspects of internet access performance but do not provide a complete picture; for instance, they do not report the average speed of large file downloads

³⁵ The bandwidth available in the core network might not yet be a limitation for the larger ISPs, but it might become one: some network planners believe that in order to support video downloads and streams the core bandwidth needs to be 30%-40% of the access bandwidth.

³⁶ For the proposed application see Isposure, at <http://www.isposure.com/index.htm>. For commercial arrangements, which accompany these tests with ones for downstream and upstream speed for TCP use to and from servers in the country, see <http://www.epitiro.com/index.html>.

or the proportion of packets that are lost (which can affect voice over the internet as well as data transfers).

5 Additional guidance on the level of service

5.1 Summary

Service providers aim to make levels of service satisfactory in various ways. However, they do not do so uniformly. The OUR considers that both service providers and consumers would benefit from shared expectations about levels of service. Some possible expectations are described and used to motivate recommendations to service providers in the rest of this section; other recommendations, which are typically more commonplace, are not discussed. The level of service guidelines, which formalise all these recommendations, are laid down in Annex B. Annex B takes precedence over this section if there are conflicts of interpretation.

Many of these guidelines concern the information about services that service providers should make readily available to consumers in various circumstances (such as buying services, paying bills or making complaints). Some of them relate to other actions that service providers should take. The OUR proposes to:

- Ask service providers from time to time how far they adhere to the guidelines.
- Monitor adherence by examining documents and performing mystery shopping.
- Publicise adherence.

5.2 Customer contact

Among the people annoyed by delays in answering customer service calls, some people might be worried more about the money spent than about the time spent waiting for answers. The OUR proposes to recommend that telecommunications service providers:

- Ensure that customer service calls can use numbers that are widely recognised to be free of charge.

5.3 Complaint handling

Current contract terms often let service providers make the final decisions about complaints, omitting provisions for independent mediation or mentions of the right to recourse to the OUR. The OUR has powers to introduce rules for complaint handling that rectify these omissions. At this stage the OUR proposes to require that telecommunications service providers:

- Develop and publish complaint handling processes that identify expected durations and include recourse to independent dispute resolution through the OUR and the Consumer Affairs Commission.

The OUR may publicise failures of service providers to resolve complaints fairly³⁷.

³⁷ Practices in publicising the results of complaint cases vary. For instance:

- In Belgium, results are published to “name and shame” the service providers.
- In the UK, results are published without naming the service providers.
- In France and Italy, results are summarized annually in statistical or descriptive formats.

5.4 Pricing

Several service providers make efforts to keep their pricing plans simple. However, there remain complications, especially as fixed services tend to be charged per minute while mobile services tend to be charged per second³⁸. Also, prepaid prices are often between two and four times as high as postpaid prices for equal levels of usage³⁹. Typically at present prepayment customers have weaker protection than postpayment ones; in particular, prepayment customers can find that credits and unused Subscriber Identity Modules (SIMs) expire unexpectedly, while postpayment customers with “rollover” tariffs can keep unused allowances of calls and messages for some time. To deal with these complications, the OUR proposes to:

- Devise publicity and teaching materials that inform consumers about the trade-offs between per-second and per-minute charges and between prepaid and postpaid prices, as well as about credit top-up and expiry⁴⁰.

Prices are very important to the poorest consumers, who probably use prepayment and submit few formal complaints⁴¹. The OUR believes that these and other consumers could be helped by comparisons of prices and information about credits and by ensuring that, as far as possible, prepayment customers have protection similar to that for postpayment ones.

Comparisons of prices might not just contain numbers; for instance, if one service provider charges per second and the others charge per minute, then the comparisons might be expressed using prices per minute, with explanatory notes saying that, for all except one service provider, calls could be cheaper than the comparisons suggested. For many pricing plans publishing the important individual rates (with any necessary explanatory notes) could well be enough⁴². If pricing plans become very complicated then comparisons might be based on “baskets” of calls and messages (perhaps for low, medium and high usage), with periodic changes so rates were not skewed to match the baskets.

The OUR proposes to:

- Publish simple comparisons between prices, with explanatory notes where necessary.
- Put these comparisons alongside comparisons of quality of service, to encourage balanced appraisal of pricing and quality together.

³⁸ For instance, for one service a call might be free, charged per second with a 30 second minimum, charged per minute with a 1 minute minimum or charged per 6 seconds with a 30 second minimum, depending on the network of the called subscriber.

³⁹ This discrepancy between prepaid and postpaid prices does not always exist: some prepaid prices are lower than the corresponding postpaid ones. Moreover, the OUR has not noted complaints about it. In fact, when 80% of customers use prepayment, an attempt to bring prepaid prices into line with postpaid ones would probably not be popular, as it would lower prepaid prices slightly (perhaps by 10%) and raise postpaid prices greatly (perhaps by 80%).

⁴⁰ For instance, a school exercise might check whether postpayment was cheaper than prepayment for people who make on-net calls for at least three minutes per working day and make off-net calls for at least one minute per working day.

⁴¹ In fact 28% of respondents to the 2009 survey said that they had grounds for contacting the OUR about complaints (not necessarily about telephony) but did not do so.

⁴² For an example, from Tanzania, with both good and bad features, see <http://www.tcra.go.tz/tariffs.php>. For descriptions and illustrations of price comparisons made available by many regulators in Europe see *On Transparency of Tariff Information* (ERG, March 2008) at [http://www.irg.eu/streaming/ERG_\(08\)_59rev2_Report_on_Transparency_of_Tariff_Information.pdf?contentId=545848&field=ATTACHED_FILE](http://www.irg.eu/streaming/ERG_(08)_59rev2_Report_on_Transparency_of_Tariff_Information.pdf?contentId=545848&field=ATTACHED_FILE).

- Revise these comparisons when prices change significantly (enough to interchange the cheapest and dearest service providers, for example).
- Monitor advertisements and sales, to check that comparisons are not quoted in misleading ways.

Throughout this document distinctions between prepayment and postpayment are drawn only when necessary. In particular, the notion of ‘credit’ is applicable generally. The credit is the amount in money that a customer is allowed to use for outgoing calls or messages. A postpayment customer might pay some of the credit in advance (in the rental paid in a monthly bill, for example) and some of the credit in arrears; the service provider might impose a credit limit on the allowed arrears. A prepayment customer pays the credit in advance. The service provider might choose to allow a security deposit to be regarded as part of the credit.

To make the conditions attached to credits more widely known, the OUR proposes to recommend that telecommunications service providers:

- Inform customers about the validity periods of each denomination of credit top-up and of inactive SIMs⁴³.
- Inform customers about any “grace periods”, which let calls and messages be received, toll-free calls be made or accounts be recharged after credits are exhausted and the validity periods of those credits end.
- Inform customers about any “negative credit”, which let calls in progress continue even after credits are exhausted, and the charges and limits applicable to any such credits.
- Inform customers about any activity period, when use must be sufficient if disconnection is to be avoided.

There are other ways in which prices can be brought to the attention of consumers. For instance, in some countries, service providers are obliged to tell their customers each year which of their own pricing plans would be most suitable for them; this helps consumers to avoid paying too much to their existing service providers, but it does not help them to choose other service providers. The OUR does not propose to introduce this unless pricing plans become very complicated.

5.5 Contracts

The OUR has been told that price changes are sometimes disguised (with, for example, extra non-optional items being added to pricing plans along with price increases) and that currency fluctuations lead to seemingly arbitrary price changes. General provisions of the *Fair Competition Act, 1993, as amended* and the *Consumer Protection Act, 2005* prohibit misleading and deceptive behaviour. Descriptions of what is or is not “fair and reasonable” can make such provisions more specific; implicitly they are being put forward by the OUR in the guidelines that describe contract changes and renewals, disconnections and interruptions of service⁴⁴. As particular examples, the OUR proposes to recommend that telecommunications service providers:

⁴³ Of course “informing customers” entails making the information easily available at all relevant times and in all relevant places, not just putting it in the small print of an old contract.

⁴⁴ For many examples of terms that would be unfair in telecommunications contracts in Australia see *Telecommunications consumer protections code* (Communications Alliance, September 2007) at http://www.commsalliance.com.au/_data/assets/pdf_file/0014/1346/C628_2007.pdf.

- Tell customers at least 30 days in advance about changes in contracts and about rights to withdraw from contracts if the changes are unacceptable⁴⁵.
- Apply changes in contracts of individual customers only after their credits at the time of notice are exhausted.

Consumers sometimes make worse buying decisions when they have too many choices⁴⁶. Scrupulous sales practices and simple pricing plans can reduce the likelihood of poor buying decisions; also, straightforward processes for withdrawing from contracts can make poor buying decisions and unauthorized service changes easier to reverse. The OUR therefore considers that guidelines on withdrawing from contracts, as well as comparisons between prices, would be beneficial.

5.6 Accounts

Some service providers have consulted focus groups (and in some cases the OUR) about making bills clearer and have redesigned their bills accordingly. They have noted that they benefit from the redesigned bills by receiving fewer calls at their call centres. Bill presentation has entered one standards document as a potential quality of service parameter (for assessment, along with various other parameters, by asking consumers their opinions)⁴⁷. The OUR does not propose to adopt this parameter, because it is subjective, but the OUR is putting forward guidelines on bill contents in this document.

Bills, as understood for postpayment customers, are not very relevant to prepayment customers, but they have counterparts that could be relevant. Service providers could supply to prepayment customers lists of itemised usage charges, but the OUR is not convinced that this would be very helpful⁴⁸. Service providers often send prepayment customers statements of the credits remaining after individual calls; such statements are useful but sometimes obscured by advertising. To generalise, and increase the use of, such statements, the OUR proposes to recommend that telecommunications service providers:

- Warn postpayment customers automatically if no credits paid for in advance will shortly remain in their accounts.
- Provide clear and prominent summaries, obtainable without listening to or scrolling past irrelevant material, of the credit remaining after every call or message in prepaid plans.
- Provide announcements or messages every week, giving the credit spent and the credit remaining, if customers so request.

⁴⁵ For the analogous rule in Europe see *Universal Service Directive* (European Commission, March 2002) at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2002:108:0051:0077:EN:PDF>. This gives customers rights to withdraw without penalty after receiving notice of proposed contract changes, to receive notice at least one month before the changes, and to be told at the time of notice that they may withdraw without penalty.

⁴⁶ For several experiments demonstrating this see *When Choice is Demotivating: Can One Desire Too Much of a Good Thing?* (Sheena Iyengar and Mark Lepper, Columbia University, June 2000) at http://www.columbia.edu/~ss957/articles/Choice_is_Demotivating.pdf.

⁴⁷ See *Speech Processing, Transmission and Quality Aspects (STQ); User related quality of service parameter definitions and measurements; Part 1: General*, ETSI EG 202 057-1 V1.3.1 (ETSI, July 2008) at <http://pda.etsi.org/pda/queryform.asp>.

⁴⁸ For an example, from India, see *Telecom consumers protection and redressal of grievances regulations 2007* (TRAI, May 2007) at <http://www.trai.gov.in/traai/upload/Regulations/64/regulation4may07.pdf>. Service providers are required to supply (at a “reasonable” cost expected not to exceed USD 1) on request by prepayment customers lists of the itemised usage charges for any period during the preceding six months.

5.7 Disconnections

A disconnection is a deliberate prevention of all use of a service. It may entail removal of physical network access points but often does not do so, even for fixed telephony (though it does entail blocking all incoming and outgoing calls and messages). It may be preceded by other measures, such as blocking all outgoing calls and messages (except toll-free ones).

Typically disconnection is intended only to occur in very particular circumstances, such as a failure to pay bills or an unacceptable use of services. Service providers are naturally reluctant to disconnect postpayment customers. Nonetheless, doing so causes complaints. The OUR proposes to recommend that telecommunications service providers:

- Proceed to disconnection by suitable step-by-step processes that give notice to the customers of what is happening and guidance on how to avoid disconnection.

5.8 Sales

Typically authorized sales and service centres, not telecommunications service providers, carry out sales. They therefore have some of the responsibility for ensuring that customers understand what is being sold. However, the service providers have most of the responsibility, as they lay down the contracts. This is recognised by the service providers who check sales premises and operations through mystery shopping and can act to improve sales practices.

Nonetheless sales staff might indulge in mis-selling; for instance, they might overstate the capabilities of equipment, understate the commitments in contracts or move customers between services without authorization (though this is unlikely without number portability). Such mis-selling might become a problem, if, for example, sales staff become less closely tied to particular service providers or many small Mobile Virtual Network Operators (MVNOs) emerge.

Not only should contract terms be reasonable; the important ones should be pointed out to customers before sales are made. Sales staff need to be trained to do this, as well as to avoid all forms of mis-selling. To reinforce existing checks, the OUR proposes to recommend that telecommunications service providers:

- Monitor sales practices to check adherence to the guidelines.
- Train sales staff of dealers, as well as of themselves, about the guidelines.

5.9 Advertisements

The OUR has heard complaints about advertisements; examples are “text for free after 5” and “unlimited overseas calls”, which do not state the restrictions. The Fair Trading Commission has pointed out that words like “unlimited” must be given their ordinary meanings, not just redefined by contract terms, if they are not to be misleading. The OUR reiterates that advertisements (and statements by sales staff) must not be misleading. To assist with ensuring this, the OUR proposes to recommend that telecommunications service providers:

- Ensure that advertisements mentioning prices contain all relevant information.
- Ensure that advertisements for internet access mentioning speeds contain access speeds measured according to the OUR quality of service standards.
- Ensure that advertisements for premium rate calls and messages mentioning prices contain examples of prices.

5.10 Privacy

Customers have the right to ensure that personal information is protected from misuse by service providers and by users of telecommunications⁴⁹. Recent arguments about directory entries show that customers do not always know that this information can be used without asking them. Also, customers rightly object to paying for keeping it confidential. Unfortunately privacy often interests consumers only after it has been violated.

The OUR proposes to recommend that telecommunications service providers:

- Implement and maintain privacy policies covering the collection, use and distribution of personal information.
- Let consumers correct, and limit the availability of, their contact details free of charge.

5.11 Acceptable use

Unwanted commercial voice calls, fax calls, text messages and electronic mail messages (“spam”) constitute an international problem, which national authorities have to combine to fight. Though the *Electronic Transactions Act, 2006* prohibits unsolicited commercial communications from being generated inside Jamaica, they might still be generated outside Jamaica⁵⁰. These and other problems are not confined to internet access services. The OUR proposes to recommend that telecommunications service providers:

- Promulgate and as far as possible enforce, acceptable use policies on commercial, malicious, fraudulent and illegal calls and messages.

5.12 Emergency access

With technologies such as wireless access and voice over the internet some conventional assumptions about emergency calls are invalid⁵¹. The OUR proposes to recommend that telecommunications service providers:

- Inform consumers about any limitations in the availability and nature of emergency calls.
- Ensure support for emergency calls to “119” when they support other calls, whether incoming or outgoing.

At one time, payphones had particular importance for emergency calls. In fact, under the *Telecommunications Act, 2000* the universal service obligation is based on various principles, including the need to ensure that payphones are reasonably accessible to customers. Payphones are often missing or broken now, to the disadvantage of consumers. However, the disadvantage might be small, given the prevalence of mobile phones,

⁴⁹ Personal information includes information about the destinations and contents of calls and messages, as well as contact details (for example).

⁵⁰ For a very extensive tool kit for dealing with spam see *Report of the OECD Task Force on Spam: Anti-Spam Toolkit of Recommended Policies and Measures* (OECD, April 2006) at <http://www.oecd.org/dataoecd/63/28/36494147.pdf>.

⁵¹ For instance, customer premises equipment for wireless access (and for voice over the internet) takes power from the mains or batteries, while customer premises equipment for conventional wireline access takes power from the exchange and is therefore not vulnerable to mains failure or battery exhaustion. In addition, voice over the internet uses networks which its service provider might not control or monitor, so its support for emergency calls from particular points of access can be affected unknown to its service provider. In practice, also, mobile and nomadic services, including voice over the internet, have problems in providing accurate location information during emergency calls, though partial solutions to these problems are known.

especially because under the *Telecommunications Act, 2000* each service provider must ensure that their customers can make free emergency calls.

Ensuring that customers can make free emergency calls might entail allowing emergency calls during grace periods after credits are exhausted or during steps towards disconnection. It certainly entails allowing emergency calls until the contracts with the callers end, as the callers remain customers until then. Also, in any rare periods beyond the formal ends of contracts when some outgoing or incoming calls are allowed, callers might reasonably expect that emergency calls could be made.

5.13 Disaster mitigation

During and after disasters telecommunications can be vital. Network resilience is required for consumer protection, even though few consumers would mention it unprompted among the most important aspects of services. Service providers are making efforts to ensure resilience; for instance, networks are underground to an increasing extent. However, the resilience of individual networks might not ensure the resilience of telecommunications as a whole.

Utilities depend on each other; for instance, electricity supplies are monitored using telecommunications and telecommunications need electricity supplies. Without planning, local failures in one utility could spread to another and then back, as national failures, to the first utility. Overall responsibility for planning to minimise the impact of disasters lies with the Office of Disaster Preparedness and Emergency Management (ODPEM). The work of the OUR needs to respond both to the overall requirements of ODPEM and to the capabilities of the service providers.

Some service providers are members of the standing committees of the National Disaster Executive (the Damage Assessment Recovery and Rehabilitation Committee, the Emergency Operations, Transport and Telecommunications Committee and the Public Education and Information Committee). As such they have been involved in the preparation of the National Disaster Plan and provide specialist advice to ODPEM, especially during disasters, when they are present at the National Emergency Operations Centre⁵².

The responsibilities of service providers include:

- Identifying interdependencies between and within utilities, especially for critical services.
- Reporting regularly on risk assessment, emergency planning and system resilience.
- Testing emergency plans at least annually, as called for by the National Disaster Plan.
- Participating in the co-ordination and testing of plans for the country as a whole that give priority in restoration to critical services irrespective of the service provider.
- Considering and, if appropriate, adopting formal mutual aid agreements to share resources in disasters, especially for critical services.
- Spreading warning announcements and messages.
- Examining and, if necessary, improving emergency plans after disasters.

In general terms, the OUR proposes to recommend that telecommunications service providers:

⁵² For a compendium of best practices drawn up by service providers, which is relevant outside Europe as well as inside it, see *European Expert-Confirmed Discretionary Best Practices* (Alcatel-Lucent, March 2007) at <http://www.bell-labs.com/EUROPE/bestpractices/index.html>.

- Support work on the National Disaster Plan and in the National Emergency Operations Centre actively and co-operatively, through formal mutual aid agreements if appropriate.
- Give priority to national needs over corporate ones in plans for disasters and actions to recover from disasters.

Organizations besides service providers have roles to play. In particular, commercial consumers need business continuity plans, which are complicated by the presence of multiple service providers; for instance, buying channels from different service providers might not increase resilience because the channels might occupy the same fibre⁵³.

The OUR will liaise with the ODPEM to ensure that appropriate measures are in place for these areas.

5.14 Further points: internet access

The dissatisfaction of consumers with the reliability and speed of internet access might be due in part to the expectations raised by sales and marketing activities. Service providers should bring the limitations of services to the attention of potential customers. The OUR proposes to recommend that internet access service providers:

- Explain clearly in promotional material and at the point of sale what performance to expect and how to measure and improve performance.

If these actions are not effective in raising consumer satisfaction considerably the OUR proposes to:

- Extend its drive around tests to mobile internet access.
- Introduce a centralised access speed monitoring service tailored specifically to the network uses and traffic flows in Jamaica⁵⁴.
- Provide a website where customers can report and compare experiences.
- Require credits, lowered future charges and withdrawals from contracts without penalty for customers for whom the access speed recorded by the tests proposed in this document was often too low⁵⁵.

5.15 Further points: premium rate calls and messages

Premium Rate Services (PRs) use telephony accounts to charge for content or products delivered with the aid of calls or messages or share the revenues from calls or messages with the recipients of the calls or messages. Following experience elsewhere, they might start to cause problems. Some service providers already provide warning announcements at

⁵³ For a guide to good practices intended for commercial customers see *Telecommunications Resilience* (CPNI, March 2006) at <http://www.cpni.gov.uk/Docs/Telecommunications-resilience-v3.pdf>.

⁵⁴ The application proposed in this document is limited to operating only when the customer equipment is connected to the network. A centralised access speed monitoring service might operate without this limitation. For instance:

- In Bahrain, two monitoring devices attached to the network of each internet service provider perform the tests proposed in this document, every hour of every day.
- In the UK, monitoring devices provided in participating customer premises perform tests very like those in this document even if the normal customer premises equipment is not connected.

⁵⁵ For instance, the access speed might be “often too low” if it was at most 50% of that advertised at times at least one hour apart from each other on at least seven working days in the previous 30 days.

the starts of premium rate calls, price information in advertisements for calls and messages to “444” numbers, and access restrictions with Personal Identification Numbers (PINs) at the starts of calls to “976” numbers. Still, consumers might need more protection. In many countries there are codes of practice for PRSs; the OUR guidelines provide simple requirements common to many codes practice⁵⁶.

Even if premium rate calls and messages are not available using national numbers they might be available using international numbers. In fact some complaints to the OUR are being unable to block calls to international numbers for competitions. Customers should reasonably expect to be able to block all outgoing premium rate calls and messages or all outgoing international calls and messages. In particular cases, the OUR can ask service providers to bar access to any numbers that appear to be misused. Further protection could be provided by allowing access only by customers having prepaid PRS accounts.

The PRS providers are not necessarily the telecommunications service providers. However, the telecommunications service providers collect payments that are partly passed to the PRS providers. They can check the activities of the PRS providers to which their customers originate calls or messages or to which they pass calls or messages. To facilitate this, the OUR proposes to recommend that telecommunications service providers:

- Incorporate the OUR guidelines, including those specific to PRSs, in their contracts with PRS providers.
- Check adherence to the guidelines by PRS providers before providing connections to public networks and regularly thereafter.
- Take responsibility for PRSs in handling complaints from customers and in paying compensation to customers.

If PRSs cause problems, the OUR proposes to:

- Add extra guidelines, particularly to give customers extra opportunities to be told about prices, limit expenditure, and stop receiving, and being charged for, calls or messages.
- Require the blocking of access to PRSs by default.
- Establish further mechanisms for supervising PRS providers and handling complaints.

As internet use increases, problems with content are likely to increase⁵⁷. The Broadcasting Commission regulates content, but only for subscriber television. When television, telephony and internet access services have charges on the same bill, consumers are likely to be confused about which organization does what, all the more so if numbers for premium rate calls or messages are advertised on television⁵⁸. The bills should therefore make plain which organization customers should contact if they are dissatisfied.

⁵⁶ For the principles commonly underlying such codes of practice see *Handbook for the Regulation of Phone-paid Services* (IARN, November 2008) at http://www.iarn.org/upload/Handbook_NOV2008.pdf.

⁵⁷ For instance, social networking websites raise concerns about the rights of consumers to correct, and limit the availability of, their contact details; these concerns are very like some of those considered in privacy policies for telecommunications services.

⁵⁸ In some countries confusion is compounded by having extra organisations. For instance:

- In Denmark, there is a separate regulator responsible for monitoring and enforcing regulations about PRSs. There is also a separate self-regulatory organisation for monitoring regulations about mobile PRSs and allocating numbers to mobile PRSs.

Annex A Quality of service standards

A.1 Measurement reporting

1. These standards place requirements on, and make recommendations for, every large service provider, where:
 - A “large service provider” is a telecommunications service provider that for a separately identified telecommunications service has at least 10,000 connected customers in the country as a whole at the beginning of the financial year.
 - A telecommunications service is “separately identified” from another telecommunications service if its advertised characteristics except for its pricing plan (and, in the case of an internet access service, its performance measured as the speed of web downloads according to these standards) imply that it is not a substitute for the other.
 - A “connected customer” is a customer that has been provided with a service and that has not yet been disconnected.
 2. Requirements are signified using “shall” and recommendations are signified using “should”.
 3. The large service providers shall submit reports on measurements to the Office of Utilities Regulation (OUR), except as set out in A.5.4, A.6.1, A.6.2 and A.6.3.
 4. The measurements reported by the large service providers shall be made separately for each separately identified telecommunications service, except as set out in A.2.1 and A.2.2.
 5. The measurements reported by the large service providers shall be made during “working days”, which, for the purposes of these standards, lie between 9:00 and 17:00 on Monday, Tuesday, Wednesday, Thursday or Friday except public holidays in Jamaica.
 6. The measurements reported by the large service providers shall be made for all “reporting periods”, which, for the purposes of these standards, are periods of three (3) months beginning on 1 January, 1 April, 1 July or 1 October. Measurements may be made by or on behalf of the OUR annually or as required when validating measurements reported by the large service providers.
 7. The measurements reported by the large service providers shall be made for the “reporting area”, which, for the purposes of these standards, is the country as a whole. Measurements may be made by or on behalf of the OUR for the country as a whole or as required when comparing different districts.
 8. The large service providers shall submit their reports to the OUR electronically in a standard tabular format no later than one (1) month after the end of each reporting period.
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- In the UK, there is a separate co-regulatory organisation for monitoring and enforcing regulations about PRSs. There is also a separate self-regulatory organisation (which is actually managed by and located with the PRS regulator) for classifying the video content of mobile PRSs.
 - In Finland, the telecommunications regulator is responsible for monitoring and enforcing regulations about using numbers for PRSs. There is also a separate self-regulatory organisation for monitoring regulations about PRSs.

9. The large service providers shall have responsibility for the accuracy of their measurements and reports, with sign-off by senior management and trained auditing staff where appropriate. Independent audits of measurements may be conducted by or on behalf of the OUR; such audits may involve spot checks and requests for information from the large service providers.
10. The large service providers shall publicise clearly and prominently on their websites, and encourage their customers to install, the proxy agent proposed by the OUR for making and recording the measurements in customer equipment set out in A.6.1, A.6.2 and A.6.3.
11. The OUR may publish the measurements reported by the large service providers or made by or behalf of the OUR at any time and in any manner that could help consumers to make informed choices and may publicize discrepancies between those measurements, the targets and other information.
12. The OUR may suspend the requirement to report measurements when, despite due diligence by the large service providers, the ability to report measurements is impaired or the measurements that could be reported would not represent the quality of service normally offered, because of:
 - Natural disasters.
 - Civil unrest.
 - Vandalism or theft.
 - Industrial disturbances.
 - Wars.
 - Arrest or restraint of the Government of Jamaica.
 - Economic embargoes against Jamaica.
 - Fires or explosions.
 - Breakdown of telecommunications outside Jamaica.

A.2 Customer contact

A.2.1 Customer service call answer ratio

Brief description

1. "Customer service call answer ratio" refers to the proportion of customer service calls that reach the first point of contact of the service provider fast enough when they are set up successfully.

Measurements

2. A customer service call is a call to a telephone number intended for customer complaints, service orders, fault reports or service enquiries. It is not a value-added service call, such as a call requesting emergency assistance, operator assistance, directory information or weather information.
3. A customer service call "reaches the first point of contact fast enough" only if it lets the caller speak to a live call centre agent or otherwise obtain information within twenty (20) seconds after being set up. In particular, it must not just invite the caller to select items by voice or key, provide promotional material, or advise the caller about waiting times, queue lengths and overloads, during that time.

4. The number of customer service calls that reach the first point of contact fast enough shall be divided by the number of customer service calls that are set up successfully. The result, which forms the customer service call answer ratio, shall be reported as a measurement in the form of a percentage rounded down to the nearest percentage point. The number of customer service calls that are set up successfully, and the number of calls that are answered (even if they do not reach the first point of contact fast enough), shall also be provided.
5. The large service providers shall make the measurements, each providing one set of measurements for all telecommunications that use the same call centre telephone number. They shall distinguish between call centre telephone numbers with different call prices.
6. The OUR would make its own measurements based on test calls.

Targets

7. At least 80% of the number of customer service calls that are set up successfully should reach the first point of contact within twenty (20) seconds.

A.2.2 Customer service caller satisfaction ratio

Brief description

1. "Customer service caller satisfaction ratio" refers to the proportion of customer service calls that are fully satisfactory to the callers when they reach the first point of contact of the large service provider fast enough.

Measurements

2. A customer service call is "fully satisfactory" to the caller if the caller judges that the first point of contact in the call deals with the relevant customer complaint, service order, fault report or service enquiry fully.
3. The number of customer service calls that are fully satisfactory to the callers shall be divided by the number of customer service calls that reach the first point of contact fast enough. The result, which forms the customer service caller satisfaction ratio, shall be reported as a measurement in the form of a percentage rounded down to the nearest percentage point. The number of customer service calls that reach the first point of contact fast enough shall also be provided.
4. The large service providers shall make the measurements, each providing one set of measurements for all telecommunications services that use the same call centre telephone number. They shall distinguish between call centre telephone numbers with different call prices.
5. The OUR would make its own measurements based on test calls.

Targets

6. No targets are set for the customer service caller satisfaction ratio.

A.3 Complaint handling

A.3.1 Customer complaint submission rate

Brief description

1. "Customer complaint submission rate" refers to the number of customer complaints received per customer for the service per reporting period.

Measurements

2. A customer complaint is an expression of dissatisfaction with a service that is submitted on behalf of a customer, that explicitly or implicitly calls for a resolution and that is not just part of a service order or a fault report. An expression of dissatisfaction with a service is a customer complaint even if it is resolved to the full satisfaction of the customer by the first point of contact.
3. A customer complaint about a retail service may be submitted in a customer service call, by personal contact at a customer service centre or in writing. A customer complaint about a wholesale service must be submitted in writing.
4. The number of customer complaints received during the reporting period shall be divided by the number of connected customers for the service at the beginning of the reporting period. The result, which forms the customer complaint submission ratio, shall be reported as a measurement in the form of a percentage rounded down to the nearest percentage point. The number of connected customers for the service shall also be provided.
5. The measurements shall include all customer complaints received during the reporting period, for the reporting area, regardless of the validity, extent of repetition, and subject of the complaint.
6. Separate measurements shall be made for particular classes of customer complaint and for different services, as well as for customer complaints taken together. The particular classes, arranged under headings, are as follows:
 - **Accounts:**
 - Disputed charges or balances.
 - Failed attempts to pay charges, change balances or determine balances.
 - Missing or late bills.
 - **Disconnections:**
 - Blocked calls or messages to or from certain numbers.
 - Disconnections for incomplete payment or credit exhaustion.
 - Failed reactivations after complete payment or credit renewal.
 - **Network:**
 - Faulty handsets.
 - Failed calls or messages.
 - Low internet access speeds.
 - **Other:**
 - Missing or late attendance at appointments.
 - Inadequate or late resolution of complaints.
 - Inadequate or late supply of services.
 - Inadequate or late repair of faults.
7. The large service providers shall make the measurements, each providing separate sets of measurements for their separately identified telecommunications services and distinguishing, within these measurements, between different classes of customer

complaint and between postpayment customers and prepayment customers. They may report measurements for additional classes under the headings above.

Targets

8. There should be at most five (5) customer complaints in total per one hundred (100) connected customers for the service in a reporting period of three (3) months.
9. There should be at most one (1) customer complaint about accounts per one hundred (100) connected customers for the service in a reporting period of three (3) months.
10. There should be at most one (1) customer complaint about disconnections per one hundred (100) connected customers for the service in a reporting period of three (3) months.

A.3.2 Customer complaint resolution ratio

Brief description

1. "Customer complaint resolution ratio" refers to the proportions of customer complaints that are resolved in given times.

Measurements

2. The time taken to resolve a customer complaint is the time beginning when a customer complaint is received by a service provider and ending when the cause for the customer complaint has been removed.
3. The numbers of customer complaints that are resolved during the reporting period in given times of fifteen (15) working days and thirty (30) working days shall be divided by the sum of the number of customer complaints outstanding at the beginning of the reporting period and the number of customer complaints received during the reporting period. The results, which form the customer complaint resolution ratio, shall be provided as measurements in the form of percentages rounded down to the nearest percentage point. The numbers of customer complaints outstanding at the beginning of the reporting period and received during the reporting period shall also be provided.
4. The measurements shall include all customer complaints resolved during the reporting period for the reporting area, regardless of the validity, extent of repetition, and subject of the customer complaint.
5. Separate measurements shall be made for particular classes of customer complaint and for different services, as well as for customer complaints taken together. The particular classes are set out in A.3.1.
6. The large service providers shall make the measurements, each providing separate sets of measurements for their separately identified telecommunications services and distinguishing, within these measurements, between different classes of customer complaint and between postpayment customers and prepayment customers. They may report measurements for additional classes of customers under the headings set out in A.3.1.

Targets

7. At least 80% and 95% of the number of customer complaints in total should be resolved in fifteen (15) working days and thirty (30) working days (respectively).

A.4 Equipment installation and maintenance: fixed telephony

A.4.1 Service supply ratio

Brief description

1. "Service supply ratio" refers to the proportions of service orders that lead to services in working order within given times, in locations where the services are offered.

Measurements

2. A service order is a request to be supplied a service that is submitted on behalf of an existing or potential customer and that is not excluded from consideration. A request to be supplied a service may be excluded from consideration only if the customer has received a satisfactory and comprehensible explanation for doing so; one such explanation is that the service is not available in the location where supply is requested. No other request to be supplied a service may be excluded from consideration even if it is fulfilled by the first point of contact.
3. A service order about a retail service may be submitted in a customer service call, by personal contact at a customer service centre or in writing. A service order about a wholesale service must be submitted in writing.
4. The service supply time is the time beginning when a service order is accepted by a service provider and ending when the service has been supplied in working order.
5. The number of service orders that lead to services in working order during the reporting period in given times of five (5) working days and ten (10) working days shall be divided by the sum of the number of service orders outstanding at the beginning of the reporting period and the number of service orders received during the reporting period. The results, which form the service supply ratio, shall be reported as measurements in the form of percentages rounded down to the nearest percentage point. The numbers of service orders outstanding at the beginning of the reporting period and received during the reporting period shall also be provided.
6. Service orders about the same service and about the same physical network access point shall be counted as the same, regardless of the number of channels or lines affected. In other cases service orders shall be counted as different from each other.
7. The large service providers shall make the measurements, each providing separate sets of measurements for their separately identifiable fixed telephony services.

Targets

8. At least 80% and 95% of the number of service orders should lead to services in working order in five (5) working days and ten (10) working days (respectively).

A.4.2 Fault report submission rate

Brief description

1. "Fault report submission rate" refers to the number of fault reports received per customer for the service per reporting period.

Measurements

2. A fault report is a report of disrupted or degraded service that is submitted on behalf of a customer and that is not excluded from consideration. A report of disrupted or degraded service may be excluded from consideration only if the customer has received a satisfactory and comprehensible explanation for doing so; one such explanation is that the customer has already submitted a report relating to the same fault, and another such

explanation is that the fault has already been traced to another network or to customer equipment. No other report of disrupted or degraded service may be excluded from consideration even if it is cleared by the first point of contact, no fault is found during tests, or it relates to the same fault as a report submitted by another customer.

3. A fault report about a retail service may be submitted in a customer service call, by personal contact at a customer service centre or in writing. A fault report about a wholesale service must be submitted in writing.
4. The number of fault reports received during the reporting period shall be divided by the number of connected customers for the service at the beginning of the reporting period. The result, which forms the fault report submission rate, shall be reported as a measurement in the form of a percentage rounded down to the nearest percentage point. The number of connected customers for the service shall also be provided.
5. Fault reports about the same fault and about the same physical network access point shall be counted as the same, regardless of the number of channels or lines affected. In other cases fault reports shall be counted as different from each other.
6. The large service providers shall make the measurements, each providing separate sets of measurements for their separately identifiable fixed telephony services.

Targets

7. There should be at most five (5) fault reports per one hundred (100) connected customers for the service in a reporting period of three (3) months.

A.4.3 Fault repair ratio

Brief description

1. "Fault repair ratio" refers to the proportions of faults that are repaired in given times, after receiving fault reports.

Measurements

2. The fault repair time is the time beginning when a fault report is received by a service provider and ending when the service has been restored to working order.
3. The number of fault reports that are cleared during the reporting period in given times of twenty-four (24) hours and forty-eight (48) hours shall be divided by the sum of the number of fault reports outstanding at the beginning of the reporting period and the number of fault reports received during the reporting period. The results, which form the fault repair ratio, shall be provided as measurements in the form of percentages rounded down to the nearest percentage point. The numbers of fault reports outstanding at the beginning of the reporting period and received during the reporting period shall also be provided.
4. Fault reports for which the faults are traced to other networks or to customer equipment shall be taken to be cleared only if the service provider has been told that the faults have been repaired.
5. The large service providers shall make the measurements, each providing separate sets of measurements for their separately identifiable fixed telephony services.

Targets

6. At least 80% and 95% of the number of faults should be repaired in twenty-four (24) hours and forty-eight (48) hours (respectively).

A.5 Service accessibility and continuity: mobile telephony

A.5.1 Network access ratio

Brief description

1. "Network access ratio" refers to the proportion of occasions when network signals are usefully accessible.

Measurements

2. Network signals are "usefully accessible" if their strength is high enough for calls to be attempted at the points that are planned to use them.
3. The sum, ranging over all base station sectors, of the lengths of time when network signals are not usefully accessible from a base station sector during the reporting period shall be divided by the product of the number of base station sectors at the beginning of the reporting period and the length of the reporting period. The result shall be reported as a measurement in the form of a percentage rounded down to two decimal places after the nearest percentage point. The number of base station sectors shall also be provided.
4. The large service providers shall make the measurements within their own networks, each providing separate sets of measurements for their separately identifiable mobile telephony services. They shall also describe how the reported results are calculated from measurements on network equipment.
5. The OUR would make its own measurements based on drive around test calls, for network signals on the network of each mobile service provider. For this purpose network signals are regarded as being usefully accessible if they record high enough signal strengths (in terms of bar indicators or numerical values on the mobile devices used for the calls) for calls to be attempted; in the absence of an objective measurement, what constitute high enough signal strengths for a particular mobile device are determined by experimentation with it. The result, which forms the network access ratio, shall be reported as a measurement in the form of a percentage rounded down to the nearest percentage point. The number of occasions when network signals are usefully accessible shall be divided by the number of occasions when network signals are tested on mobile devices. The occasions on which network signals are recorded on mobile devices on the same network shall be separated from each other by at least two (2) minutes.
6. The large service providers should make their own measurements based on drive around test calls, too, using the same techniques as the OUR.

Targets

7. No targets are set for the network access ratio.

A.5.2 Call set up ratio

Brief description

1. "Call set up ratio" refers to the proportion of national calls that are set up successfully when network signals are usefully accessible.

Measurements

2. A call is "set up successfully" if, following dialling from a location where network signals are usefully accessible to a location where the telephone number dialled identifies a functioning network termination point, the called party busy tone, ringing tone or answer signal is recognised at the calling network termination point.

3. The number of national calls that are set up successfully shall be divided by the number of national calls that are attempted when network signals are usefully accessible. The result, which forms the call set up ratio, shall be reported as a measurement in the form of a percentage rounded down to the nearest percentage point. The number of national calls that are attempted when network signals are usefully accessible shall also be provided.
4. The large service providers shall make the measurements within their own networks, each providing separate sets of measurements for their separately identifiable mobile telephony services. They shall also describe how the reported results are calculated from measurements on network equipment.
5. The OUR would make its own measurements based on drive around test calls, for calls both on one network and between two networks of the mobile service providers. For this purpose calls are regarded as being set up successfully if they are set up within twenty (20) seconds of the last digit of the destination subscriber number being passed to the network.
6. The large service providers should make their own measurements based on drive around test calls, too, using the same techniques as the OUR.

Targets

7. At least 96% of the number of national calls, both on one network and between two networks of the mobile service providers, should be set up successfully.

A.5.3 Call retention ratio

Brief description

1. "Call retention ratio" refers to the proportion of national calls that stay up for long enough when they are set up successfully.

Measurements

2. A call is "retained successfully" if it does not end until it is ended normally by a user.
3. The number of national calls that are retained successfully shall be divided by the number of national calls that are set up successfully. The result, which forms the call retention ratio, shall be reported as a measurement in the form of a percentage rounded down to the nearest percentage point. The number of national calls that are set up successfully shall also be provided.
4. The large service providers shall make the measurements within their own networks, each providing separate sets of measurements for their separately identifiable mobile telephony services. They shall also describe how the reported results are calculated from measurements on network equipment.
5. The OUR would make its own measurements based on drive around test calls, for calls both on one network and between two networks of the mobile service providers. For this purpose calls are regarded as being retained successfully if they stay up for at least two (2) minutes.
6. The large service providers should make their own measurements based on drive around test calls, too, using the same techniques as the OUR.

Targets

7. At least 98% of the number of national calls, both on one network and between two networks of the mobile service providers, that are set up successfully should be retained successfully.

A.5.4 Voice quality ratio

Brief description

1. "Voice quality ratio" refers to the proportion of national calls that offer voice quality better than the poorest on a three point scale while they stay up for long enough.

Measurements

2. A call offers voice quality better than the poorest if all the participants in the call judge that it has quality "indifferent" or "good" instead of "poor". The poorest quality has speech broken up badly in ways that are common in calls that networks ultimately drop.
3. The number of national calls that for two (2) minutes offer voice quality better than the poorest shall be divided by the number of national calls that stay up for two minutes. The result, which forms the voice quality ratio, shall be reported as a measurement in the form of a percentage rounded down to the nearest percentage point. The number of national calls that stay up for two minutes shall also be provided.
4. The OUR would make the measurements based on drive around test calls, for calls both on one network and between two networks of the mobile service providers.
5. The large service providers should make their own measurements based on drive around test calls, too, using the same techniques as the OUR.

Targets

6. No targets are set for the voice quality ratio.

A.6 Service reliability and speed: internet access

A.6.1 HTTP speed

Brief description

1. "HTTP speed" refers to the speed of web downloads.

Measurements

2. The HTTP speed is the speed at which a reply can be received after an HTTP packet is sent to the network. It would be reported as a measurement in the form of a speed in kilobytes per second rounded to two decimal places.
3. The measurements would be obtained from test transmissions to various international servers of HTTP "get" request messages, with the corresponding reply messages from the servers.
4. The proxy agent would make and record the measurements after being installed on customer equipment.
5. The large service providers should make their own measurements on widely dispersed customer equipment, using the same techniques as the proxy agent.

Targets

6. No targets are set for the HTTP speed.

A.6.2 ICMP round trip transmission time

Brief description

1. "ICMP round trip transmission time" refers to the time taken by "ping" echoes.

Measurements

2. The ICMP round trip transmission time is the average time beginning when an ICMP packet is sent to the network and ending when a reply is received. It would be reported as a measurement in the form of a time in milliseconds rounded to two numerically significant figures.
3. The measurements would be obtained from test transmissions to various international servers of ICMP echo ("ping") request messages, with the corresponding reply messages from the servers.
4. The proxy agent would make and record the measurements after being installed on customer equipment.
5. The large service providers should make their own measurements on widely dispersed customer equipment, using the same techniques as the proxy agent.

Targets

6. No targets are set for the ICMP round trip transmission time.

A.6.3 DNS round trip transmission time

Brief description

1. "DNS round trip transmission time" refers to the time taken by Internet Protocol (IP) address look ups.

Measurements

2. The DNS round trip transmission time is the average time beginning when a DNS packet is sent to the network and ending when a reply is received. It would be reported as a measurement in the form of a time in milliseconds rounded to two numerically significant figures.
3. The measurements would be obtained from test transmissions to the DNS servers used by the service provider of DNS IP address look up request messages, with the corresponding reply messages from the servers.
4. The proxy agent would make and record the measurements after being installed on customer equipment.
5. The large service providers should make their own measurements on widely dispersed customer equipment, using the same techniques as the proxy agent.

Targets

6. No targets are set for the DNS round trip transmission time.

Annex B Level of service guidelines

B.1 Information provision

1. These guidelines place requirements on, and make recommendations for, every telecommunications service provider. Many relate to the information about a service.
2. Requirements are signified using “shall” and recommendations are signified using “should”.
3. Information about a service for a customer should be accurate, up to date and expressed in clear and simple language. In written form, it should be formatted to be easily read and it should be conspicuously available at the website, retail offices and sales outlets of the service provider.
4. If a customer requests information about a service then:
 - The information should be spoken or written and delivered by manual or electronic communications, according to the preference of the customer.
 - The customer should incur a charge no greater than the cost of providing the information.
 - The information, or an explanation for delay, should be provided within five (5) working days after the request is received.
5. The information about a service to which these principles apply should include:
 - Details of how the service provider can be contacted.
 - Details of how complaints are handled.
 - The pricing plan.
 - The contract terms.
 - The privacy policy.
 - The acceptable use policy.
 - Emergency access conditions.
 - Any information specific to the service.
 - The availability of the service in different areas of the country.
 - The OUR quality of service standards.
 - The OUR level of service guidelines.

B.2 Customer contact

1. The details of how the service provider can be contacted should cover:
 - Contact details and opening hours for customer service relating to customer complaints, service orders, fault reports and service enquiries.
 - Contact details, opening hours and any charges for operator assistance, directory enquiries and technical help, where available.
 - Locations of any guides to installation or operation.

2. The contact details for customer service relating to customer complaints, service orders, fault reports and service enquiries should include a telephone number to which calls are recognisably free of charge, both on-net and off-net. The quality of service offered through that number should be as good as that offered through any other number given in the customer contact details.
3. If possible, customer complaints, service orders, fault reports and service enquiries should be closed to the satisfaction of the customers by the staff providing the initial responses without recourse to other people. When this does not happen they should be assigned case numbers by which the customers can refer to them.

B.3 Complaint handling

1. The details of how complaints are handled shall cover:
 - A statement of the consumer's right to complain.
 - Contact details and opening hours for customer service relating to customer complaints, service orders, fault reports and service enquiries.
 - The types of supporting information needed when making complaints.
 - The expected durations of the steps.
 - The escalation mechanisms, both within the service provider and to the OUR and the Consumer Affairs Commission.
 - The nature of complaint records.
2. Customers shall be assisted by the service provider in lodging complaints if they so request.
3. Written complaints shall be acknowledged within three (3) working days after they are received.
4. If complaints are not resolved within one (1) month after they are received by the service provider, customers shall be given regular progress reports.
5. Customers shall be told the conclusions of their complaints, and the results of any related investigations, within three (3) working days after the conclusions are reached.
6. Customers dissatisfied with the conclusions about their complaints shall be told that they may refer their complaints to the OUR and the Consumer Affairs Commission.
7. While complaints are being handled by the service provider, the OUR or the Consumer Affairs Commission, customers shall not be asked to pay sums to which the complaints relate.
8. Complaints shall be recorded even if they are resolved to the full satisfaction of the customers by the first points of contact.
9. Each complaint record shall include:
 - The name and address of the customer.
 - Any case number.
 - The nature of the complaint.
 - The result of any investigation.
 - The conclusion about the complaint.
 - The date when the complaint was received.

- The date when the complaint was resolved.
9. Complaint records shall be kept for at least six (6) months after the complaints are resolved.

B.4 Pricing

1. The pricing plan for a service should cover:
 - The prices without taking into account any discounts (such as those for calls and messages to “best friends”, for “buy one get one free” top-up, and for high expenditure).
 - A breakdown down according to what the charges cover, in what circumstances the charges recur and in what circumstances the charges would be changed.
 - Any limitations on the time of use or amount of use of the service, and any variations in the charges according to the time of use, place of use or amount of use of the service.
 - A list of all the products and services bundled in the service, with the prices of any of the products and services that the service provider also sells separately.
 - A list of any other products and services needed in order to use the service.
 - Any charge payable and extent of usage required for withdrawing from contracts before the contracts would otherwise end.
 - Any charge payable and extent of usage required for unlocking handsets.
 - Any warranties.
 - The frequency of preparing bills and the methods of delivering bills.
 - The payment options, with any associated charges.
 - Any charge payable for late payment.
 - Any charge payable for reconnecting the customer after disconnection.
 - Any deposit payable, with the rules for calculating interest.
 - The validity periods and any other conditions associated with different denominations of credit top-up and with Subscriber Identity Modules (SIMs).
 - Any grace periods during which calls or messages may be received, toll-free calls may be made or accounts may be recharged after credits are exhausted and the validity periods of those credits end.
 - Any possibilities of, charges for, and limits to, calls in progress continuing after credits are exhausted.
 - Any activity periods during which the service must be used sufficiently if disconnection is to be avoided.
 - Any limitations on the telephone numbers to which calls or messages may be originated or from which calls or messages may be received.
2. Charges should not depend on factors that consumers do not understand or know (such as fluctuations in exchange rates or traffic volumes).
3. Charges should be simple enough that consumers educated to primary level can calculate the prices of calls to national destinations lasting two minutes at any given time.

4. Customers should be charged only in accordance with the pricing plans and contracts to which they have consented explicitly.

B.5 Contracts

1. The contract terms for a service should cover:
 - The contract period.
 - Changes to the contract.
 - Withdrawals from the contract.
 - Interruption of the service.
 - Blocking of the service.
 - Disconnections.
 - Renewals of the contract.
 - Requirements for, and refunds of, deposits.
 - References to the other information provided under the OUR level of service guidelines, indicating that it, too, forms legal commitments.
2. Contracts should not prejudice the ability of consumers to take legal action for breach of contract or unfair contract terms using whatever evidence the courts find admissible.
3. Customers should be given notice about proposed changes to their pricing plans or contracts, and about withdrawals from contracts without penalty, at least one (1) month in advance.
4. Customers should be charged nothing for withdrawing from contracts when they do not accept proposed changes to the pricing plans or contracts.
5. Customers should have their pricing plans and contracts changed only after their credits at the time of notice are exhausted and the validity periods of those credits end.
6. Customers should be able to withdraw from contracts without impediment or delay if they pay all amounts due and give notice at least one (1) month in advance.
7. Customers should be charged no more for withdrawing from contracts before the contracts would otherwise end than they would be for continuing the contracts.
8. Customers should be able to unlock their handsets without impediment or delay if they pay all amounts due and give notice at least one (1) month in advance.
9. Customers should be charged nothing for unlocking their handsets if they withdraw from contracts, the contracts end or they are disconnected.
10. Customers should receive refunds of any amounts paid but no longer due if they withdraw from contracts, the contracts end or they are disconnected.
11. Customers should receive rebates at the full rate if their services are interrupted for at least forty-eight (48) hours after they make fault reports.
12. Customers should be able free of charge to ensure the blocking of all outgoing premium rate calls and messages and all outgoing international calls and messages.
13. Customers should be able free of charge to ensure the blocking of all calls and messages by reporting the loss, theft or unauthorized use of equipment containing Subscriber Identity Modules (SIMs).

14. Customers should not be taken to accept new contracts (including replacements for existing contracts when those end) without their informed consent.

B.6 Accounts

1. Each bill should include:
 - The billing name and address of the customer.
 - A brief description of the services covered by the bill.
 - For fixed telephony and internet access, the address to which service is provided (if it is different from the billing address)
 - The current business name of the service provider.
 - A customer account reference.
 - The billing period.
 - The total amount billed, any offsetting credits (such as payments, rebates and discounts), the government taxes (showing how these are calculated) and the net amount payable.
 - The date when the bill was issued.
 - The date when payment is due.
 - The payment options, with any associated charges.
 - Contact details, opening hours and any charges for customer service relating to customer complaints, service orders, fault reports and service enquiries.
 - A comparison with previous bills.
2. Customers should have access to itemised details of all charges on bills, if they so request.
3. Customers should not be charged for bills unless they request itemisation details of previous bills or request copies of bills more than six (6) months after the bills were issued.
4. Bills should be issued no later than one (1) month after the billing periods end.
5. Charges for roaming calls should be billed no later than two (2) months after the calls are made.
6. Payment should be due at least one (1) month after the bill is issued and at least one (1) month after the billing period ends.
7. Billing records should be kept for at least six (6) months after the corresponding bill is issued. If a complaint about the bill is lodged during that period, the billing records should be kept until the complaint is resolved.
8. Customers should receive announcements or messages free of charge automatically, stating that their credits paid for in advance are exhausted in postpaid plans, if they so request.
9. Customers should be able to receive announcements or messages free of charge, giving the remaining credits and the validity periods (modified according to any activity periods) after every call or message in prepaid plans.

10. Customers should receive announcements or messages free of charge automatically every week, giving the remaining credits and the validity periods (modified according to any activity periods), if they so request.
11. Announcements and messages about credits should offer simple conversions from monetary amounts into the allowed minutes, calls and messages.
12. Announcements and messages about credits should not contain irrelevant material before the essential information.
13. Customers that have exhausted the credits in prepaid plans should be able to receive calls and messages and make toll-free calls at least until the validity periods of those credits end.
14. The validity period of the credit in a prepaid plan should be the greatest among the validity periods of the credits bought by the customer.
15. One incoming or outgoing call or message should constitute sufficient use during the activity period to avoid disconnection.

B.7 Disconnections

1. Processes for disconnection should begin only in one of the following circumstances:
 - The customer has failed to pay a bill in its entirety one (1) month after it was delivered and nobody has lodged a complaint or enquiry about it.
 - The customer has exhausted all the credit, the validity period of that credit has ended and any grace period has ended.
 - The customer has not used the service during the activity period.
 - The customer has breached the acceptable use policy or other necessary contract terms (such as those for premium rate calls and messages).
 - The contract period has ended.
 - The OUR requires disconnection.
2. Processes for disconnection could involve the following steps before disconnection:
 - Informing customers about the steps in the processes.
 - Using voice calls or text messages to warn about possible disconnections and advise on avoiding disconnections (by re-activating services by topping up SIMs, for example).
 - Arranging plans for payment of the outstanding charges and any charges for late payment.
 - Restricting the services (to receiving incoming calls and making toll-free calls, for example).
 - Suspending the services (with the possibility of immediate reconnection on payment).

B.8 Sales

1. Retail offices and sales outlets should be monitored by service providers to maintain adherence to the OUR level of service guidelines.
2. Sales staff should be trained in the contents and implications of the OUR level of service guidelines.

3. Sales staff should not make false or misleading claims.
4. Sales staff should not ask customers for their telephone numbers or account identifiers with other service providers before they have given informed consent to changing between service providers.
5. Particularly important items of information should be drawn to the attention of customers during sales processes. Such items include:
 - The pricing plan in its entirety.
 - All contract terms that deal with the contract period, withdrawals from the contract and disconnections.
 - Any contract terms that customers could not expect or could have misunderstood from promotional material.
 - Any information specific to the service that is identified in the OUR level of service guidelines.
 - Any implications of the service for health and safety, including the ability to make emergency calls.

B.9 Advertisements

1. Advertisements and other promotional material should not make false or misleading claims.
2. Advertisements and other promotional material mentioning prices should contain, clearly and prominently, explanations of how those prices are calculated.
3. Advertisements and other promotional material mentioning speeds for internet access should contain, clearly and prominently, realistic estimates of the speed of web downloads (measured according to the OUR quality of service standards).
4. Advertisements and other promotional material about premium rate calls and messages should contain, clearly and prominently, the prices for calls of one (1) minute or messages (as appropriate), as well as full explanations of how prices are calculated and accurate descriptions of the services.

B.10 Privacy

1. The privacy policy for a service should cover:
 - The personal information collected from consumers.
 - The uses to which the information could be put.
 - Any third parties to whom the information could be disclosed.
 - How consumers can limit the collection, use and disclosure of the information.
 - How consumers can access the information.
 - How consumers can correct the information.
 - The steps taken to ensure that the information is accurate and up to date.
 - The steps taken to protect the information.
 - The redress and remedy mechanisms adopted following any breach of privacy.

2. The privacy policy should be drawn to the attention of consumers before personal information about them is collected or requested.
3. Personal information about consumers (including information about the destinations and contents of their calls and messages) should be collected, used or disclosed by service providers only to assist service provision, operation and billing, to act as evidence in legal cases against the consumers, and to meet any obligations related to law enforcement, except with the informed consent of the consumers.
4. Consumers should be able to access and correct personal information such as their contact details easily.
5. Consumers should be able, free of charge, to:
 - Prevent their calling line identifiers from passing to recipients of calls and messages.
 - Prevent their names and addresses from appearing in telephone directories.
 - Have the originators of frequent malicious calls and messages traced.
 - Change their telephone numbers if they receive many malicious calls or messages.
 - Change their telephone numbers if they receive many calls or messages intended for other recipients.

B.11 Acceptable use

1. The acceptable use policy for a service should cover:
 - Requirements in unsolicited commercial calls and messages, to let consumers indicate free of charge that they do not wish to receive them⁵⁹.
 - Requirements to tell recipients of unsolicited commercial calls and messages the sources of contact details, if so requested.
 - Prohibitions on originating malicious calls and messages.
 - Prohibitions on making fraudulent offers.
 - Prohibitions on threatening or encouraging illegal activities.
 - Prohibitions on transmitting content over the network illegally.
 - Prohibitions on collecting personal information without informed consent.
 - Prohibitions on gaining access over the network to equipment inside or outside the network without informed consent.
 - Prohibitions on disrupting acceptable use of the network.
 - Prohibitions on using misleading identities when originating calls and messages.
2. Attempts to gain access to equipment inside the network should be monitored, logged and where possible, blocked by service providers.
3. There should be full co-operation by service providers with the relevant authorities in enforcing legal obligations.

⁵⁹ A message might be a voice message, a fax message, a text message or an electronic mail message.

B.12 Emergency access

1. The emergency access conditions for a service should cover:
 - Information about whether emergency calls make information about the caller location automatically available to the emergency call centre.
 - Warnings about any applicable customer equipment that is not usable for emergency calls without external power or functioning batteries.
 - Warnings about any locations or circumstances in which emergency calls are likely to fail.
 - Any grace periods during which emergency calls may be made after credits are exhausted.
 - Any processes for disconnection that let emergency calls be made even though services are otherwise restricted.
 - Confirmation that emergency calls to the common emergency number “119” can be made free of charge until the contract ends.
 - Any telephone numbers (except the common emergency number) that receive emergency calls or messages, with any associated charges.
2. Services that allow some incoming calls from telephone numbers or some outgoing calls to telephone numbers should allow outgoing emergency calls, even if they do not allow all incoming and outgoing calls.

B.13 Disaster mitigation

1. Work on the National Disaster Plan and in the National Emergency Operations Centre should be supported actively and co-operatively, through formal mutual aid agreements and shared business continuity plans if appropriate.
2. Plans by service providers to mitigate disasters and actions by service providers to recover from disasters should give priority to national needs over corporate ones.

B.14 Further points: internet access

1. The information specific to an internet access service that is made available to consumers should include:
 - Realistic estimates of the performance (measured as the speed of web downloads according to the OUR quality of service standards) to be expected for given times of use, places of use, amounts of use and access technologies.
 - Descriptions of the user experience of different content and applications to be expected from the performance, taking into account any traffic management by the service provider.
 - Advice on selecting, installing and configuring equipment to obtain the best possible performance.
 - Advice on making measurements of performance as reliable and consistent as possible.
 - Advice on obtaining and using the specific application for measuring performance proposed in the OUR quality of service standards.
 - Advice on reducing the insecurity of internet use, especially for financial transactions.

- Advice on obtaining and using virus checkers, spam filters, spyware removers and firewalls, including options that are free of charge.
- Any restrictions on access to content or applications.

B.15 Further points: premium rate calls and messages

1. Contracts between telecommunications service providers and Premium Rate Service (PRS) providers should incorporate certain principles. These principles are additional to any requirements of organizations such as the Betting, Gaming and Lotteries Commission. They are as follows:

- **All premium rate services:**
 - Customer privacy should be protected by PRS providers at least as well as by telecommunications service providers.
 - Acceptable use policies of telecommunications service providers should apply to PRS providers as well as other customers.
 - All advertising and other promotional material should contain, clearly and prominently, the prices for calls of one (1) minute or messages (as appropriate), as well as full explanations of how prices are calculated and accurate descriptions of the services.
 - Users should need to enter personal identification numbers before incurring charges for any premium rate service for which the prices for calls of one (1) minute or messages (as appropriate) are at least ten dollars (\$10).
- **Premium rate services aimed at children:**
 - Users should be obliged to confirm free of charge before starting that they have permission from the account holders to access the premium rate service.
 - Users should not be able to incur charges for the premium rate service of more than two hundred dollars (\$200) each month.
- **Subscription premium rate services:**
 - Users should be informed free of charge the cost, the contact details of the PRS provider, the frequency of charging and how to stop receiving, and incurring charges for, calls or messages; this information should be provided in all advertising and other promotional material, before incurring any charges and after incurring successive blocks of charges of two hundred dollars (\$200).
 - Users should be able to send free 'stop' messages to stop receiving, and incurring charges for, calls or messages.
 - Users should not be charged if they run out of credit but continue to receive calls or messages.
- **Quiz or gaming premium rate services:**
 - Users should be informed free of charge the cost, the contact details of the PRS provider, the maximum number of calls or messages and how to stop receiving, and incurring charges for, calls or messages; this information should be provided in all advertising and other promotional material, before incurring any charges and after incurring successive blocks of charges of two hundred dollars (\$200).
 - Users should be able to send free 'stop' messages to stop receiving, and incurring charges for, calls or messages.

- Quiz or gaming premium rate services should not be aimed at children.
 - **Chat premium rate services:**
 - Users should be informed free of charge the cost, the contact details of the PRS provider, the maximum number of calls or messages and how to stop receiving, and incurring charges for, calls or messages; this information should be provided in all advertising and other promotional material, before incurring any charges and after incurring successive blocks of charges of two hundred dollars (\$200).
 - Users should be able to send free 'stop' messages to stop receiving, and incurring charges for, calls or messages.
 - Chat premium rate services should not be aimed at children.
 - **Contact or dating premium rate services:**
 - Users should be warned about the risks in supplying contact details.
 - Users should be removed rapidly from the system on asking to be removed.
 - Contact or dating premium rate services should not be aimed at children.
 - **Web push premium rate services:**
 - Users should be told free of charge the cost, the download size and the terminal compatibility requirements before incurring any charges.
 - Users should receive free confirmations of requests to access web push premium rate services before being provided with the content.
 - **Sexual entertainment premium rate services:**
 - Users should need to enter telephone numbers in distinctive ranges.
 - Users should need to enter personal identification numbers to gain access to sexual entertainment premium rate services.
 - Sexual entertainment premium rate services should not be aimed at children.
2. The implementation of the principles set out above should be established before connections are made to public networks and monitored by the telecommunications service providers thereafter.
 3. Consumers that wish to complain about premium rate services should have direct recourse to their telecommunications service providers, who should be responsible for handling the complaints and making any refunds and other payments due to the consumers.

Annex C Comparable regulation elsewhere

Countries resembling Jamaica in some respects have taken the following steps towards implementing quality of service standards relating to telecommunications:

- In Trinidad and Tobago quality of service standards and level of service guidelines for retail services were issued for consultation in 2005 and 2009 and quality of service standards for wholesale services were issued for consultation in 2006 and 2009. The quality of service standards for retail services are now undergoing revision to take account of the standards for wholesale services, which have been passed to the relevant government department for drafting into law. The level of service guidelines deal particularly with providing information, complaint handling, contracts, accounts, disconnections, advertisements, directories and privacy.
- For member states of the Eastern Caribbean TELEcommunications authority (ECTEL), such as Saint Vincent and the Grenadines, quality of service standards for retail services excluding resale were approved as models in 2007; level of service guidelines have not been devised yet. The quality of service standards have since been adopted by all the other ECTEL member states (Dominica, Grenada, Saint Christopher and Nevis, and Saint Lucia). The delay in adopting them in Saint Vincent and the Grenadines is due merely to the workload of the relevant government department. Corresponding quality of service standards for resale were issued for consultation in 2009; they enable the introduction of quality of service standards for resale, but this is thought unlikely to happen (as many resellers are believed to have too few skills and resources to satisfy the reporting and publishing requirements).
- In Botswana quality of service standards were issued for consultation in 2008; level of service guidelines were adopted in 2008. The quality of service standards were copied from some designed for Nigeria. The level of service guidelines deal particularly with providing information, complaint handling, contracts, accounts and advertisements. Adherence to them is voluntary and the regulator envisages transferring responsibility for monitoring adherence to a self-regulatory organization at some stage.
- In Bahrain quality of service standards were adopted in 2008; level of service guidelines were issued for consultation in 2009. Certain measurements, drawn from ITU recommendations about internal network performance, were added to the quality of service standards very late in their development; the regulator later recognised their limited relevance to customer perceptions of quality and did not require their implementation. The service providers became very co-operative when they understood that the other measurements could be published. However, some service providers needed to modify their operation support systems to use the measurement definitions properly; for instance, there had to be uniformity in the use of trouble tickets and clarity in any distinction between complaints and enquiries. Consequently measurements are only being published for 2010 onwards⁶⁰. The level of service guidelines deal particularly with providing information, complaint handling, contracts, accounts, sales, directories and privacy. Earlier consultations had considered insolvent prepaid service providers, bulk commercial communications and disconnections.

⁶⁰ The first drive around tests independent of the service providers were performed just before the third mobile service provider entered the market, so they have not been published.

In all these countries there are more quality of service parameters than the OUR is proposing for Jamaica. Among the parameters are often ones like those proposed for Jamaica, and for these parameters there are sometimes targets. Figure 6 summarises the extent to which these parameters are found in those countries⁶¹.

⁶¹ In some cases the measurements to be reported are different in detail from those proposed by the OUR; for instance, they might be the mean and standard deviation of the time taken to do all the actions, instead of the proportion of actions done in a given time. In addition:

- For Trinidad and Tobago, the quality of service standards for retail services are the ones used as the basis for this tabulation; they are now undergoing revision before a further consultation and might be made to match the standards for wholesale services that are now being drafted into law. Some measurements are intended to be made separately for different geographic areas. Some targets become more demanding, or are newly introduced, in three successive periods (of zero, nine and eighteen months after the service provider enters the market); the ones given here are those for the first and third periods where they are present but different and are those for the third period otherwise.
- For Saint Vincent and the Grenadines, the targets become more demanding in three successive years; the ones given here are the first and third of these.

	These proposals	Trinidad and Tobago	Saint Vincent and the Grenadines	Botswana	Bahrain
Customer service call answer ratio	80% in 20 seconds	80% in 20 seconds, 95% in 40 seconds	70% - 80% in 20 seconds	Measurements but no targets	Measurements but no targets
Customer service caller satisfaction ratio	No targets	No measurements or targets	No measurements or targets	No measurements or targets	No measurements or targets
Customer complaint submission rate	5 per 100 customers (total), 1 per 100 customers (accounts), 1 per 100 customers (disconnections)	1 per 100 bills (accounts)	1 - 0.5 per 100 bills (accounts)	Measurements but no targets	Measurements but no targets
Customer complaint resolution ratio	80% in 15 working days (total), 95% in 30 working days (total)	95% in 24 hours, 100% in 48 hours (disconnections); 75% in 10 working days - 5 working days, 95% in 7 working days, 100% in 20 working days (overall)	100% in 5 working hours - 3 working hours (disconnections)	Measurements but no targets	Measurements but no targets
Service supply ratio	80% in 5 working days, 95% in 10 working days	75% in 5 working days - 3 working days, 95% in 7 working days - 5 working days, 100% in 10 working days	100% in 14 working days - 7 working days	Measurements but no targets	Measurements but no targets
Fault report submission rate	5 per 100 customers	6.5 - 5 per 100 customers	No measurements or targets	Measurements but no targets	Measurements but no targets
Fault repair ratio	80% in 24 hours, 95% in 48 hours	75% in 24 hours, 100% in 48 hours	80% - 90% in 24 hours, 90% - 95% in 48 hours, 95% - 98% in 72 hours	Measurements but no targets	Measurements but no targets
Network access ratio	No targets	99%	No measurements or targets	No measurements or targets	No measurements or targets
Call set up ratio	96%	No measurements or targets	85% - 98%	Measurements but no targets	Measurements but no targets
Call retention ratio	97%	93% - 95%	No measurements or targets	Measurements but no targets	Measurements but no targets
Voice quality ratio	No targets	No measurements or targets	No measurements or targets	No measurements or targets	No measurements or targets
HTTP speed	No targets	No measurements or targets	No measurements or targets	No measurements or targets	Measurements but no targets
ICMP round trip transmission time	No targets	No measurements or targets	No measurements or targets	Measurements but no targets	Measurements but no targets
DNS round trip transmission time	No targets	No measurements or targets	No measurements or targets	No measurements or targets	Measurements but no targets

Figure 6 Comparable quality of service parameters in various countries

Annex D Examples of contract terms from service providers

D.1 Unbalanced terms

Topic	Quotation	Comment
Changes to contracts	These Terms and Conditions annul all prior understandings between you and us. By using Services, you have agreed to these Terms and Conditions. We reserve the right to amend or unilaterally change any of ... products and/or ... services and or the terms and conditions of this Agreement subject to notifying you of such amendments. Such notification may be by way of advertisement in the national media and/or our website. If Service is used after notice of amendment, then it shall be deemed accepted. This agreement is governed by the Laws of Jamaica.	Customers should be told individually about adverse changes, with enough notice to withdraw before the changes become effective.
Changes to contracts	The Company has the right to modify this Agreement from time to time upon reasonable notice to the Customer. If the Customer continues to use the Service after such notice, then he shall be deemed to have accepted such modification. Notice to Customers may be published in a daily newspaper circulated in the island, by radio announcement, by notices placed in our Business Offices or dealer locations, on our website at ... or sent by email or voice mail messages to Customer Line or other contact given on the Application Form.	Customers should be told individually about adverse changes, with enough notice to withdraw before the changes become effective.
Changes to pricing	The company's tariffs, for the Service, as amended from time to time, also forms part of the Agreement. We reserve the right to alter such tariffs and will notify the Customer of such a change by notice in writing and/or via national media and/or via our website.	Customers should be told individually about adverse changes, with enough notice to withdraw before the changes become effective.
Security deposits	You will be required to make a security deposit in order to be connected or reconnected to the Network. The company may, at its absolute discretion opt to pay interest on the security deposits received.	Interest should not be optional, and its rate should be defined (relative to the bank rate).
Changes to credit limits	We reserve the right to increase or lower your credit limit at any time and from time to time, without prior notice.	The credit limit should not be increased without customer agreement or lowered without notice.
Bills	Payment is due upon invoice presentation date, i.e. once the invoice is available to you. We will not be held responsible for customers' non-receipt of invoices delivered by post. Your statement is deemed to have been delivered to you on the day it is available for you to pick up, whether or not you do so. You must continue to make payments even when postal service is disrupted, as invoices can otherwise be obtained by contacting the Customer Care Centre.	There should be a period allowed for payment after the invoice is presented.
Information about credit	No invoice, including the provision of periodic or itemized statements of account, or record of calls made and/or received will be sent to a prepaid customer. We are in no way obligated to give you proof of the current state of your pre-paid account, how your credit is used or prima facie evidence of the state of your account or of any other matters recorded.	Customers should be able to find out their account balances before and after all calls and messages.
Unauthorized use of handsets	You will immediately report and confirm in writing any loss, theft, damage or unauthorized use of your equipment and/or SIM Card. You will remain liable for all charges and costs related to and/or incurred by your SIM Card, including all costs associated with its unauthorized use.	The account should be blocked immediately after the phone is reported lost or stolen.

Topic	Quotation	Comment
Transfer of credit	We reserve the right to transfer a credit or debit balance to or from any of your accounts with us (including but not limited to accounts for mobile service, ordinary telephone service and Internet service) provided that We give you prior notice thereof.	Normally (in banking, for example) for customers make decisions about their own account balances.
Complaint handling	You must notify the Company of any contested charge prior to the Final Date for payment stated on the bill in which such charge appears. Charges in the same bill which are not contested shall be paid on or before the Final Date. If after investigation it is established to our satisfaction that the whole or any part of any contested charge is legitimate, then you must pay such charges on the Final Date shown in the next bill.	There is no mention of referring disputes to an external organization or of deferring payment pending dispute resolution by that organization.
Disconnection	<p>We may disconnect the Service if</p> <ul style="list-style-type: none"> (i) You fail to pay any charge on the Final Date; (ii) if you or your spouse or any company of which you or your spouse is the principal shareholder is indebted to us on any other account (including, but not limited to, mobile service, ordinary telephone service and Internet service); (iii) if You are using the Service or any other service or facility in violation of any law, or to defraud Us, or to resell any form of telecommunication service ,or to trespass upon any of our facilities or works, or to meddle ,interfere or tamper with any of Our facilities or works or otherwise cause harm to any of our facilities or works, or in contravention of any restriction imposed by Us; or (iv) if you use or permit the use of the service to defraud, abuse, annoy, threaten or harass any other person or unreasonably meddle, interfere or tamper with the service of another person or with another person's private rights (v) if You commit any other breach of this Agreement; or (vi) if You incur charges in excess of the deposit or in excess of Your Usage Advance; or (vii) We deem your Service to be Inactive. 	The ability to link separate accounts is intrusive, especially when extended to spouses and companies. Also, there is no description of when the service provider may deem the service to be inactive (in which respect the term is incomplete but not unbalanced).

Topic	Quotation	Comment
Disconnection	<p>This Agreement may be suspended and/or terminated without the need for prior written or verbal communication:</p> <ul style="list-style-type: none"> - if you breach any statutory restrictions/regulations/ procedures that govern this network and Service; - if any information supplied by you is found to be false or misleading; - if you do not comply with and/or breach any of the enlisted Terms and Conditions of this Agreement; - if intermittent checks, modifications and/or maintenance is deemed necessary by the Network; - for non-payment of overdue amounts under this Agreement; - if you fail credit checks that may be performed from time to time; - if we have any reasonable cause to believe that you are unable to pay the charge; - if you notify us that your handset has been lost or stolen; - if we have reasonable cause to believe that Service was obtained fraudulently or fraudulent or improper use of your handset or SIM Card is taking place against us or a third party; - if you commit a trespass on the Network or any equipment owned by the company; - if you conspire to defraud the company; - if, in the sole opinion of the company, you should do anything which could or is detrimental to the operation of the Network or the company; - if Services rendered to you in the sole opinion of the company may cause the Operation of the Network to be jeopardized or impaired, or allow others to do any of the foregoing with your equipment or any act which does not comply with relevant legislation and regulation; - if we are unable to provide the Services to you; - if you do anything to avoid or evade the company's charges; - if you do anything which in the opinion of the company is intended to or result in the evasion or avoidance of the company's legitimate charges or defraud the company; - if you do anything which is intended, or results in or likely to bypass the Service; 	<p>Though notice periods might be short they should rarely be missing. Also, "if we are unable to provide the Services to you" seems an evasion of responsibility. Arguably some items are poorly worded and others are superfluous.</p>
Rights to numbers	<p>We reserve the right at any time to alter or replace a mobile number allocated to you or any other name, code or number whatsoever associated with our service.</p>	<p>Any number change except one that is unavoidable (for example, because the regulator needs the number) should merit compensation.</p>

D.2 Inadequate or incomplete terms

Topic	Quotation	Comment
Contract periods	<p>By signing the Application form you have agreed to a minimum service period of twelve (12) calendar months. The service period may be extended in writing at anytime to twenty-four (24) months or thirty-six (36) months or any longer period as may be specified on the executed Application form.</p>	<p>This should say that extending the service period needs the explicit agreement of the customer.</p>
Unauthorized use of handsets	<p>All ... authorized handsets sold through our authorized dealer channel are network locked. Customers are not permitted to remove or have a third party remove the lock, without explicit authorization from</p>	<p>There is no mention of what payment or usage results in authorization for unlocking.</p>

Disconnection	Non-payment of bills by the Final Date will lead to the Service being disconnected and/or suspended. Upon suspension, prompt payment of the outstanding amounts will ensure restoration of service. Non-payment of bills after suspension shall result in permanent disconnection from the network, necessitating full payment of outstanding amounts and reapplication for Service.	There is no mention of any period when emergency calls can still be made.
Disconnection	In the case of prepaid service, no bill will be sent to You and network access will be terminated where the Service is deemed to be inactive by Us, that is, if You have a zero balance on Your account for a period in excess of the period prescribed by us and or the value of the prepaid credit on your account has expired and has not been renewed for a period in excess of the period prescribed by us.	This should state how to find out the prescribed periods for expiry of a prepaid account.
Making numbers publicly available	Our Network may allow the display of your telephone number in our telephone directory and on receiving handsets, unless otherwise specified.	This should say that the customer has the right to prevent display.

D.3 Legally suspect terms

Topic	Quotation	Comment
Returning goods	If you have a problem with your recharge card please call ... Customer Care. No refund will be given for your recharge card from the dealer.	This is not clearly consistent with the legal right to return goods to suppliers.
Disclosure of personal information	We reserve the right to refuse any request for account information where we are unable to verify that the requester is in fact the account holder, authorized contact or user of the account. The company may however, disclose any information about you and your accounts: - if the company, in its discretion, deems such disclosure necessary or desirable; - pursuant to legal process or subpoena - if disclosure is necessary to protect the company's interests. By using the Service you consent to and authorize any such disclosure. The company shall not become liable by reason of the giving of such information or of it being inaccurate or incomplete.	The absence of liability when sharing information might be unreasonable, especially as the information could be incorrect or supplied without customer authorization.
Legal costs	Should the company deem it necessary to enforce its rights hereunder in any legal action you will reimburse the company for all costs and expenses including reasonable attorney's fees incurred as a result of such legal action.	This seems unreasonable and unnecessary, as the court will decide costs.
Resale	The Service is confined to Your own use and not for resale of any form of telecommunication service. Non-observance of this restriction shall be a ground for immediate termination of the Service.	This might be anticompetitive and unenforceable on small operations.

Topic	Quotation	Comment
Limitation of liability	<p>The customer indemnifies and saves The Company harmless against the following:</p> <ul style="list-style-type: none"> - Acts or omission of other companies when their facilities are used in connection with The Company's facilities to provide service. - Any defacement or damage to the customer's premises resulting from the existence of The Company's instruments, apparatus and associated wire on such premises, or from the installation or removal thereof, when such defacement or damage is not the result of the negligence of The Company or its employees. - Any accident, injury or death occasioned by its equipment or facilities, when such is not due to negligence of The Company. - Claims for libel, slander or infringement of copyright arising from the material transmitted or recorded over its facilities. - Claims for infringement of patent arising from combining with or using in connection with, facilities of The Company any apparatus and systems of the customer. - Claims arising from the collection of balances from customers by third party agents. - All other claims arising out of any act or omission of the customer in connection with facilities provided by The Company 	<p>The item referring to the acts or omissions of other carriers might be unreasonable: the service provider that has the customer account should take responsibility for acts and omissions due to all parties with whom the service provider contracts to provide the service. The other items are omitted from other contracts by the same service provider; they are probably superfluous but not legally suspect.</p>

D.4 Poorly worded terms

Topic	Quotation	Comment
Unauthorized use of handsets	The provision of pre-paid service is currently operational on the company network only. It is not possible to use your ... pre-paid handset on another GSM network.	This should say "pre-paid SIM for roaming on another GSM network", if that is its meaning.
Transfer of credit	You may not transfer any credit balance to a third party and ... has no obligation to pay or refund you for the cost of the handset or any credit remaining on your prepaid account.	This has an unclear scope. It could refer to all transfers of credit balances or just repeat remarks about losing credit on deactivation.

D.5 Obsolete or superfluous terms

Topic	Quotation	Comment
Rebates	If you took advantage of the one-time offer to obtain a rebate for a non-GSM cellular phone that meets specified requirements, you, in signing the rebate receipt, assume all liabilities associated with the phone that was traded in and have indemnified ... from any third party claims.	This could be removed if the offer has expired.
Commercial communications	... will send you information from time to time that is deemed relevant to you. If you do not wish to receive this information you may notify ... in writing.	This could be removed, as it just states the law.
Interception	Mobile telephone calls may be intercepted. Accordingly, complete privacy, although likely, cannot be guaranteed.	This would be better placed outside the contract, as it just states a fact independent of the contract. Also, outside the contract it could be expanded to be more useful, especially if mobile telephony is used for financial services.

Topic	Quotation	Comment
Equipment access	The Company will install a device to indicate the termination of its network, and the beginning of the customer's in-house facilities for which the customer is responsible. The device, called a Master Jack, will be owned and maintained by The Company as a part of its network. Master Jacks will be deployed in new customers' premises during installation visits. The installation of Master Jacks for existing Customers will be based on a schedule, which will be determined by The Company.	This could be removed if the programme has been completed.

Annex E Legal framework

E.1 Office of Utilities Regulation Act (Act 13 of 1995 and Act 14 of 2000)

- 4.—(1) Subject to the provisions of this Act, the functions of the Office shall be to—
- (a) regulate the provision of prescribed utility services by licensees or specified organizations;
 - (b) receive and process applications for a licence to provide a prescribed utility service and make such recommendations to the Minister in relation to the application as the Office considers necessary or desirable;
 - (c) conduct such research as it thinks necessary or desirable for the purposes of the performance of its functions under this Act;
 - (d) advise the responsible Minister on such matters relating to the prescribed utility service as it thinks fit or as may be requested by that Minister; and
 - (e) subject to section 8A, carry out, on its own initiative or at the request of any person, such investigations in relation to the provision of prescribed utility services as will enable it to determine whether the interests of consumers are adequately protected.
- (2) The Office may, where it considers necessary, give directions to any licensee or specified organization with a view to ensuring that—
- (a) the needs of the consumers of the services provided by the licensee or specified organization are met; and
 - (b) the prescribed utility service operates efficiently and in a manner designed to—
 - (i) protect the health and well being of users of the service and such elements of the public as would normally be expected to be affected by its operation; and
 - (ii) protect and preserve the environment; and
 - (iii) afford to its consumers economical and reliable service.
- (3) In the performance of its functions under this Act the Office shall undertake such measures as it considers necessary or desirable to—
- (a) encourage competition in the provision of prescribed utility services;
 - (b) protect the interests of consumers in relation to the supply of a prescribed utility service;
 - (c) encourage the development and use of indigenous resources; and
 - (d) promote and encourage the development of modern and efficient utility services,
 - (e) enquire into the nature and extent of the prescribed utility services provided by a licensee or specified organization.
- (4) The Office shall have power to determine, in accordance with the provisions of this Act, the rates or fares which may be charged in respect of the provisions of a prescribed utility service.
- (5) The Office may, by order published in the *Gazette*—
- (a) prescribe the unit of measurement and the type of measuring device to be used by a licensee or specified organization in relation to prescribed utility services;

- (b) prescribe standards for the measurements of quantity, quality or other conditions relating to prescribed utility services;
 - (c) provide for the inspection and testing of any prescribed utility services or of any equipment or measuring device used in connection therewith;
 - (d) prescribe minimum standards of quality and accuracy in relation to any equipment used or any commodity supplied by a licensee or specified organization in connection with the relevant prescribed utility service;
 - (e) prescribe the system of accounts to be kept by a licensee or specified organization as respects prescribed utility services;
 - (f) make such provisions as the Office considers necessary to ensure the safety of the public as respects prescribed utility services; and
 - (g) impose fees (to be known as regulatory service fees) to be paid by licensees or specified organizations at the rates specified in the order.
- 10.—(1) The Office may require a licensee or specified organization to furnish such information or submit such returns at such intervals as the Office may require in relation to the operations of that licensee or specified organization.
- (2) A licensee or specified organization which fails to comply with subsection (1) shall be guilty of an offence and liable on summary conviction before a Resident Magistrate to a fine not exceeding two million dollars.
- 16.—(1) The Office with the approval of the Minister may make regulations prescribing anything which may be or is required to be prescribed under this Act or imposing on a licensee or specified organization obligations in relation to the supply of information to the Office and members of the public of the rates or fares payable in respect of its prescribed utility services.
- (2) Regulations made under subsection (1) may provide for the imposition of penalties on summary conviction in a Resident Magistrate's Court not exceeding a fine of two hundred thousand dollars or imprisonment for a term not exceeding six months or both such fine and imprisonment.

E.2 Telecommunications Act (Act 12 of 2000)

- 4.—(1) The Office shall regulate telecommunications in accordance with this Act and for that purpose the Office shall—
- (a) regulate specified services and facilities;
 - (b) receive and process applications for a licence under this Act and make such recommendations to the Minister in relation to the application as the Office considers necessary or desirable;
 - (c) promote the interests of customers, while having due regard to the interests of carriers and service providers;
 - (d) carry out, on its own initiative or at the request of any person, investigations in relation to a person's conduct as will enable it to determine whether and to what extent that person is acting in contravention of this Act;
 - (e) make available to the public, information concerning matters relating to the telecommunications industry;
 - (f) promote competition among carriers and service providers;

- (g) advise the Minister on such matters relating to the provision of telecommunications services as it thinks fit or as may be requested by the Minister;
 - (h) determine whether a specified service is a voice service for the purposes of this Act;
 - (i) carry out such other functions as may be prescribed by or pursuant to this Act.
- (2) In making a decision in the exercise of its functions under this Act the Office shall observe reasonable standards of procedural fairness, act in a timely fashion and observe the rules of natural justice, and, without prejudice to the generality of the foregoing, the Office shall—
- (a) consult in good faith with persons who are or are likely to be affected by the decision;
 - (b) give to such persons an opportunity to make submissions to and to be heard by the Office;
 - (c) have regard to the evidence adduced at any such hearing and to the matters contained in any such submissions;
 - (d) give reasons in writing for each decision;
 - (e) give notice of each decision in the prescribed manner.
- (3) In the exercise of its functions under this Act, the Office may have regard to the following matters—
- (a) the needs of the customers of the specified services;
 - (b) whether the specified services are provided efficiently and in a manner designed to—
 - (i) protect the health and well-being of users of the service and such members of the public as would normally be affected by its operation;
 - (ii) protect and preserve the environment;
 - (iii) afford economical and reliable service to its customers;
 - (c) whether the specified services are likely to promote or inhibit competition.
- (4) Where the Office has reasonable grounds for so doing, it may for the purpose of its functions under this Act, the Office may require a licensee to furnish, at such intervals as it may determine, such information or documents as it may specify in relation to that licensee's operations and the licensee shall be given a reasonable time within which to furnish the information.
- 44.—(1) Providers of retail services to consumers shall use reasonable endeavours to ensure that those services are—
- (a) reliable;
 - (b) provided with due care and skill; and
 - (c) rendered in accordance with the standards reasonably expected of a competent provider of those services.
- (2) A complaint may be made to the Office by any customer who is dissatisfied with the services provided to him by a carrier or service provider or who claims to be adversely affected by the actions of a carrier or service provider.
- (3) The Office may make rules subject to affirmative resolution prescribing quality standards for the provision of specified services in relation to all service providers or dominant service providers, as the case may be.

- (4) The Office may make rules relating to the administration and resolution of customer complaints.
45. Service providers may—
- (a) refuse to provide retail services to consumers; or
 - (b) discontinue or interrupt the provision of such services to a customer, whether or not that customer is a consumer, pursuant to an agreement with that customer,
- only on grounds which are reasonable and non-discriminatory and where any such action is taken, the service provider shall state the reasons therefor.
- 47.—(1) Every carrier and service provider shall, subject to subsection (2), regard and deal with as secret and confidential, all information regarding the type, location, use, destination, quantity and technical configuration of services used by their customers.
- (2) A carrier or service provider may—
- (a) disclose such information to the Office or pursuant to the provisions of any law for the time being in force which requires such disclosure for the purpose of the investigation or prosecution of a criminal offence;
 - (b) disclose such information with the written consent of the customer;
 - (c) disclose such information where the disclosure is necessary in defence of the carrier or service provider in any proceedings brought against that carrier or service provider.
- (3) A service provider or carrier shall not be liable to any action or suit for any injury, loss or damage resulting from a disclosure of information made pursuant to subsection (2).
- 48.—(1) Every service provider shall take such steps as are necessary to ensure that, in relation to its retail public voice services—
- (a) each customer of that service can reasonably and reliably reach—
 - (i) emergency services by dialing the number specified for use in connection with such services; and
 - (ii) subject to subsection (2), a directory assistance service;
 - (b) no charge is imposed for calls to emergency services.
- (2) A service provider may charge a fee for the provision of directory assistance.
49. A service provider who knowingly permits its services or facilities to be used by any person to defraud, abuse, annoy, threaten or harass any other person shall be guilty of an offence and shall be liable on summary conviction in a Resident Magistrate's Court to a fine not exceeding five hundred thousand dollars.

E.3 Fair Competition Act (Act 9 of 1993 and Act 22 of 2001)

- 37.—(1) A person shall not, in pursuance of trade and for the purpose of promoting, directly or indirectly, the supply or use of goods or services or for the purpose of promoting, directly or indirectly, any business interest, by any means—
- (a) make a representation to the public that is false or misleading or is likely to be misleading in a material respect;
 - (b) make a representation to the public in the form of a statement, warranty or guarantee of performance, efficacy or length of life of goods that is not based on an adequate and proper test thereof, the proof of which lies on the person making the representation;

- (c) falsely represent to the public in the form of a statement, warranty or guarantee that services are—
 - (i) of a particular kind, standard, quality, or quantity; or
 - (ii) supplied by a particular person or by a person of a particular trade, qualification or skill;
 - (d) make a representation to the public in a form that purports to be—
 - (i) a warranty or guarantee of any goods; or
 - (ii) a promise to replace, maintain or repeat an article or any part thereof or to repeat or continue service until it has achieved a specified result, if the form of purported warranty or guarantee or promise is materially misleading or if there is no reasonable prospect that it will be carried out;
 - (e) make a materially misleading representation to the public concerning the price at which any goods or services or like goods or services have been, are or will be ordinarily supplied.
- (2) For the purposes of paragraph (e) of subsection (1), a representation as to price to be construed as referring to the price at which the goods or services have been supplied generally in the relevant market unless it is clearly specified to be the price at which the goods or services have been supplied by the person by whom or on whose behalf the representation is made.
- (3) For the purposes of this section and section 38, the following types of representation shall be deemed to be made to the public by and only by the person who caused it to be expressed, made or contained, that is to say, a representation that is
- (a) expressed on an article offered or displayed for sale;
 - (b) expressed on anything attached to, inserted in or accompanying an article offered or displayed for sale, its wrapper or container, or anything on which the article is mounted for display or sale;
 - (c) expressed on a display in the place where the article is sold;
 - (d) made in the course of selling the article to the ultimate consumer;
 - (e) contained in or on anything that is sold, sent, delivered, transmitted or in any other manner made available to a member of the public.

E.4 Consumer Protection Act (Act 9 of 2005)

- 20.—(1) Where a consumer purchases goods or services from a provider, the provider shall give to the consumer a receipt showing—
- (a) the amount paid by the consumer;
 - (b) the date on which the purchase is made;
 - (c) a description of the goods or services sold;
 - (d) where applicable, the professional fee charged; and
 - (e) such other information as may be prescribed.
- (2) At any time subsequent to the purchase, the receipt issued by the provider shall be adequate proof of the purchase of the goods or services and may be used for the purposes of refund in any of the circumstances specified in this Act.

- (3) A provider who contravenes subsection (1) commits an offence and is liable on summary conviction before a Resident Magistrate to a fine not exceeding fifty thousand dollars or to imprisonment for a term of thirty days or to both such fine and imprisonment.
- 28.—(1) No person shall, in the course of trade or business, engage in conduct that is misleading or deceptive or is likely to mislead or deceive.
- (2) Any person who contravenes subsection (1) commits an offence and is liable on summary conviction before a Resident Magistrate to a fine not exceeding one million dollars or imprisonment for a term not exceeding one year or to both such fine and imprisonment.
- 30.—(1) No person shall, in the course of trade or business, in connection with the supply or possible supply of goods or services or with the promotion by any means of the supply or use of goods or services—
- (a) falsely represent that—
- (i) the goods or services are of a particular kind, standard, quality, grade, quantity, composition, style, or model, or have had a particular history or particular previous use;
 - (ii) services are of a particular kind, standard, quality, or quantity, or that they are supplied by any particular person or by any person of a particular trade or business, qualification, or skill;
 - (iii) a particular person has agreed to acquire goods or services;
 - (iv) goods are new, reconditioned, or that they were manufactured, produced, processed, or reconditioned at a particular time;
 - (v) goods or services have any sponsorship, approval, endorsement, performance characteristics, accessories, uses or benefits; or
 - (vi) a person has any sponsorship, approval, endorsement, or affiliation;
- (b) make a false or misleading representation—
- (i) with respect to the price of any goods or services;
 - (ii) concerning the need for any goods or services;
 - (iii) concerning the existence, exclusion, or effect of a condition, warranty, guarantee, right or remedy; or
 - (iv) concerning the place of origin of goods.
- (2) Any person who contravenes subsection (1) commits an offence and is liable on summary conviction to a fine not exceeding one million dollars or imprisonment for a term not exceeding one year or to both such fine and imprisonment.
- 45.—(1) This section applies to any case where a provider contracts to provide a consumer with a good or service over an extended period of time, and that provider contracts to receive periodic payments from the consumer for the good or service.
- (2) The provider, as the case may be, shall—
- (a) be required to present an accurate claim for the exact amount of, or the exact percentage of, the total value of the good or service actually received to date by the consumer; and

- (b) upon presentation of such accurate claim, be entitled to void the contract if payment in full is not made within a reasonable time after the presentation of the claim, or by a pre-determined payment date which forms part of the contract.
- (3) In the event that the provider is unable to present an accurate claim as mentioned in subsection (2), the provider, as the case may be, may act in accordance with subsection (4).
- (4) The provider may—
 - (a) present the consumer with an estimated claim; and
 - (b) if the estimated claim is reasonably accurate, request that the consumer pays the estimated amount on the conditions specified in subsection (5).
- (5) The conditions referred to in subsection (4) are that—
 - (a) where the amount estimated is greater than the accurate claim, the amount paid by the consumer will be credited to the amount owing at the next time that an accurate claim is presented; and
 - (b) the provider shall under no circumstances, be able to void the contract or impose any penalty therein contained in the event of breach by the consumer, solely on the ground that the estimated amount has not been paid by the consumer, either in full or in part.
- (6) Any provider who presents an estimated claim for any good or service shall be required to present an accurate claim no later than 90 days after presentation of the estimate.
- (7) Subsection (6) shall apply notwithstanding that the consumer of the good or service does not pay the estimated amount claimed or pays it in full or in part.
- 46.—(1) Where a service is to be provided to a consumer—
 - (a) the provider is deemed to be providing the consumer with a benefit under the relevant contract; and
 - (b) the provisions of subsection (2) shall apply where a fee is collected from the consumer for that service.
- (2) The provider shall—
 - (a) be liable to—
 - (i) make a full refund to the consumer; and
 - (ii) further compensate the consumer for all expenses reasonably incurred by the consumer as a result of contracting the provider to provide the benefit, if for reasons not attributable to the consumer, the benefit is not received by the consumer; or
 - (b) where the benefit is received only in part—
 - (i) refund a proportionate part of the fees collected; or
 - (ii) subject to subsection (3), be entitled to receive a similar proportionate part of the fees if not yet paid.
- (3) Subsection (2) shall not apply in any case where the consumer contracts to pay the provider the prescribed fee regardless of whether the consumer receives the benefit.
- (4) The provider who offers a service to the consumer shall—
 - (a) be required to stipulate the extent of the benefit that shall be deemed to be attached to the service; and

- (b) provide the consumer with an appropriate warranty that—
 - (i) the benefit shall be enjoyed for a reasonable time, subject to the fulfillment of such conditions attached by the provider as may be reasonable to the consumer's enjoyment of that benefit; and
 - (ii) in the absence of the enjoyment of the benefit, the provider shall again provide the service free of cost to the consumer, however the performance of the warranty is subject to the Commission's determination as to the provision of or absence of the benefit.
- (5) A provider who contravenes subsection (2) commits an offence and is liable on summary conviction before a Resident Magistrate to a fine not exceeding five hundred thousand dollars and in default of payment to imprisonment for a term not exceeding six months.

E.5 Electronic Transactions Act (Act 15 of 2006)

- 29.—(1) A person who sends unsolicited commercial communications to consumers shall give to a consumer to whom any such communication is sent—
- (a) the opportunity to decline to receive any further such communications from that person; and
 - (b) upon request by the consumer, the identifying particulars of the source from which that person obtained the consumer's contact information or other personal information.
- (2) A person who fails to comply with subsection (1) commits an offence.

E.6 Disaster Preparedness and Emergency Management Act (Act 15 of 1993)

- 5.—(1) The functions of the Office shall be to carry out such activities as may be necessary to give effect to the objects specified in section 4 and, without prejudice to the generality of the foregoing, such functions shall include—
- (a) developing and implementing policies and programmes to achieve and maintain an appropriate state of national and sectoral preparedness for coping with all emergency situations which may affect Jamaica;
 - (b) encouraging and supporting disaster preparedness and mitigation measures in all the parishes in collaboration with the local government authorities, community based organizations and the private and voluntary agencies, respectively;
 - (c) providing appropriate training programmes and consulting services related to all aspects of disaster preparedness, disaster mitigation, loss reduction, and disaster management;
 - (d) planning and implementing programmes to enhance public awareness and understanding of disaster related issues, emergency management, hazard prevention and other similar matters;
 - (e) identifying and analyzing hazards or emergency situations and conducting related operational research into their effects;
 - (f) establishing, maintaining and managing mutual assistance and co-operation agreements.
- (2) It shall be the duty of the Office to—

- (a) advise the Minister on major issues relating to disaster mitigation, preparedness, warning systems and emergency management;
 - (b) prepare guidelines for disaster relief and response;
 - (c) initiate, co-ordinate, inspect, evaluate and support—
 - (i) the development of a National Disaster Plan;
 - (ii) the development and testing of emergency response plans by appropriate agencies including the emergency services, the security forces, the private sector, and voluntary agencies;
 - (iii) contingency plans related to specific incidents;
 - (d) identify any emergency contingencies that are within or related to the area of responsibility of each Ministry and public sector agency, and develop with that Ministry or public sector agency, a plan for mitigating or responding to that contingency;
 - (e) be instrumental in stimulating public interest in disaster mitigation, preparedness and emergency management and in securing public co-operation and participation in achieving planned objectives;
 - (f) encourage—
 - (i) measures for mitigating the effect of hazards and to reduce losses from disaster; and
 - (ii) the development of comprehensive disaster prevention and preparedness programmes and capabilities.
- (3) For the purpose of discharging its functions under this Act, the Office may, subject to the provisions of this Act, do anything and enter into any transaction which, in the opinion of the Office, is necessary to ensure the performance of its functions.

Annex F Information requests made to the service providers

F.1 Customer contact and complaint handling: fixed and mobile telephony

1. Please list the ways in which your customers can get in touch with you to make an enquiry or complaint (for example, by personal visit to an office, by text message, by email, or by calling a call centre), saying how these are made known to customers and roughly what proportion of contacts occurs in each way.
2. Please describe what customers must do when calling your call centre and what steps they must take to be connected to human agents.
3. What (if any) calls to your call centre are chargeable, and what are the rates then? (Please answer for both on-net and off-net origination.)
4. Please state:
 - What measurements you make of call centre answer times.
 - What targets for these measurements you aim to meet.
 - What the measured values have been.For example, you might say:
 - “We measure the proportion of calls that are answered by a human call centre agent within 20 seconds.
 - We aim to ensure that 80% of calls are answered within 20 seconds.
 - Over the past 3 months 84% of calls have been answered within 20 seconds, both during peak hours and at other times.”
5. Please state:
 - What measurements you make of responses to enquiries and complaints about telecommunications.
 - What targets for these measurements you aim to meet.
 - What the measured values have been.For example, you might say:
 - “We measure the proportion of enquiries and complaints about telecommunications that are dealt with fully to the satisfaction of the callers by the first point of contact in the first call to a call centre.
 - We aim to ensure that 60% of enquiries and complaints about telecommunications are dealt with in this way.
 - Over the past 3 months 75% of enquiries and complaints about telecommunications have been dealt with in this way, both during peak hours and at other times.”
6. Please describe the classes into which enquiries and complaints are put (such as “don’t understand bill” and “lost pre-paid credit through expiry”).
7. Please state how many enquiries or complaints have been put into each of these classes over a recent representative period.
8. Please state any practices for customer compensation that apply to dealing with specific classes of enquiries or complaints (such as “network fault”).

9. Please describe the complaint handling procedures, including how customers are informed about their rights.
10. Please say what, if any, special arrangements are in place to help customers with disabilities.

F.2 Equipment installation and maintenance: fixed telephony

1. Please state:
 - What measurements you make of installation completion times for the fixed network.
 - What targets for these measurements you aim to meet.
 - What the measured values have been.

(Please consider residential services and commercial services separately if different targets apply.)

For example, you might say:

 - “We measure the number of installations in the fixed network and the proportions of installations in the fixed network that are completed within 5 working days of being accepted as within the serving area.
 - We aim to ensure that 95% of installations are completed within 5 working days.
 - Over the past 3 months, there have been 152 installations, 83% of which have been completed within 5 working days.
 - We do not distinguish between residential customers and commercial customers for this purpose.”
2. Please state:
 - What measurements you make of fault repair times for the fixed network.
 - What targets for these measurements you aim to meet.
 - What the measured values have been.

(Please consider residential services and commercial services separately if different targets apply.)

For example, you might say:

 - “We measure the number of faults in the fixed network and the proportions of faults in the fixed network that are repaired within 24 hours and 72 hours of their being detected by the OUR staff or reported by customers (whichever is the sooner).
 - We aim to ensure that 75% of faults are repaired within 24 hours and 95% of faults are repaired within 72 hours.
 - Over the past 3 months, there have been 86 faults, 73% of which have been repaired within 24 hours and 97% of which have been repaired within 72 hours.
 - We do not distinguish between residential customers and commercial customers for this purpose.”
3. Please describe what measurements you make of accuracy in keeping appointments for installation and repair.
4. Please describe any practices for customer compensation that apply to installation, repair and keeping appointments for installation and repair.
5. Please state your projected growth for telephony and internet services for the next 6 months and next 12 months as a percentage of population.

F.3 Service accessibility and continuity: mobile telephony

1. Please state:
 - What measurements you make of mobile service accessibility and continuity for the mobile network.
 - What targets for these measurements you aim to meet.
 - What the measured values have been.(Please consider on-switch measurements and off-switch measurements separately.)

For example, you might say:

 - “We measure the proportions of unsuccessful call setup attempts and of dropped calls by conducting tests at walking speed outside at 100 randomly chosen locations every 3 months; in each location we attempt 2 on-net calls and 2 off-net calls during peak hours.
 - For this purpose a call setup attempt is regarded as unsuccessful if ring tone or busy tone is received within 15 seconds of sending the dialled digits, a call is regarded as dropped if it fails before 2 minutes elapse and peak hours are 8-12 a.m. and 2-6 p.m.
 - We aim to ensure that 98% of call setups succeed and that 98% of calls are not dropped after being successfully set up.
 - We do not record dropped calls on-switch except to ensure that callers are not charged beyond the time of dropping.”
2. Please describe any practices for customer compensation that apply to mobile service accessibility and continuity.
3. Please state your projected growth in coverage of Jamaica for the next 6 months and next 12 months as a percentage of geography and of population.

F.4 Service reliability and speed: internet access

1. Please describe the checks that you make to ensure that customers obtain the advertised availability and speed.
2. Please describe the tests that you tell customers (including the locations of any servers involved) to make if they are concerned about availability or speed.
3. Please describe any practices for customer compensation that apply to internet service availability and speed.

F.5 Disaster mitigation: fixed and mobile telephony

1. Please state what measurements you make of network availability and reliability, what targets for these measurements you aim to meet, and what the measured values have been. (Please consider core segments and access segments of the network separately.)
2. Please describe the extent to which components of your network (including cables, towers, power sources and support systems as well as network elements) are duplicated, located, constructed and insulated from overload so as to maintain service in the event of disasters.
3. Please describe your plans for business continuity in the event of disasters.

4. Please describe any regular tests of these plans that are performed regularly, giving the intervals at which they are performed.

F.6 Service performance: internet access

1. Please state for Internet Access Services by Dial-up, the measurements that you make, and the most recently measured values, of:
 - Login time
 - Successful log-in ratio
 - Data transmission speed achieved
 - Unsuccessful data transmission ratio
 - Delay (one way transmission time)(These parameters are described in ETSI EG 202 057-4 at <http://pda.etsi.org/pda/queryform.asp>.)
2. Please state for Internet Access Services by Broadband, the measurements that you make, and the most recently measured values, of:
 - Supply time for initial connection
 - Fault rate
 - Fault repair time
 - Login time
 - Successful log-in ratio
 - Data transmission speed achieved
 - Unsuccessful data transmission ratio
 - Delay (one way transmission time)(These parameters are described in ETSI EG 202 057-4 for the most part; one is described in ETSI EG 202 057-1 and two can thought of much like others in ETSI EG 202 57-1 at <http://pda.etsi.org/pda/queryform.asp>.)

F.7 Premium rate services: fixed and mobile telephony

1. Please state:
 - Whether a market for premium rate calls or SMS/MMS messages (which are charged at rates higher than standard national rates) is likely to develop in Jamaica in the future.
 - Which numbers from the current Jamaica national numbering plan and short codes outside the current plan would be preferred.
 - Which interconnection arrangements would be preferred.
 - Which content would be likely.
2. Please state which options your customers have for barring calls or SMS/MMS messages to or from individual numbers, ranges of numbers or all numbers. (Please consider both numbers inside the current Jamaica national numbering plan and numbers outside the current Jamaica national numbering plan. Please also regard short codes as numbers.)

Annex G Abbreviations

CAC	Consumer Affairs Commission
CACU	Consumer Advisory Council on Utilities
CMTS	Cable Modem Termination System
DNS	Domain Name System
DSL	Digital Subscriber Line
ECTEL	Eastern Caribbean TELEcommunications authority
ETSI	European Telecommunications Standards Institute
EU	European Union
FTC	Fair Trading Commission
HTTP	HyperText Transfer Protocol
IARN	International Audiotex Regulators Network
ICMP	Internet Control Message Protocol
IDRC	International Development Research Center
IETF	Internet Engineering Task Force
IP	Internet Protocol
ISP	Internet Service Provider
ITU	International Telecommunication Union
JCC	Jamaica Chamber of Commerce
MVNO	Mobile Virtual Network Operator
NFC	Near Field Communication
OECD	Organization for Economic Co-operation and Development
ODPEM	Office of Disaster Preparedness and Emergency Management
OFT	Office of Fair Trading
OUR	Office of Utilities Regulation
PIN	Personal Identification Number
PRS	Premium Rate Service
QOS	Quality Of Service
SDCCH	Stand-alone Dedicated Control CHannel
SIM	Subscriber Identity Module
SMS	Short Message Service
TCH	Traffic CHannel
UK	United Kingdom
UN	United Nations
US	United States
USSD	Unstructured Supplementary Service Data